

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

ERICSSON, INC., ET AL)
-vs-) DOCKET NO. 6:10cv473
Tyler, Texas
1:50 p.m.
D-LINK CORPORATION, ET AL) June 12, 2013

8 TRANSCRIPT OF TRIAL
9 AFTERNOON SESSION
JURY NOTES AND BENCH TRIAL
BEFORE THE HONORABLE LEONARD DAVIS,
10 UNITED STATES CHIEF DISTRICT JUDGE, AND A JURY

A P P E A R A N C E S

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produced by a Computer.

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1 P R O C E E D I N G S

2 (Jury out.)

3 COURT SECURITY OFFICER: All rise.

4 THE COURT: Please be seated.

5 All right. We have a Jury Note No. 1

6 that reads: Can we see a copy of Plaintiff's Exhibit

7 208-D, Intel source code regarding MAC and LLC header?

8 Signed by the Jury Foreperson, Donna Mangrum.

9 Is that in their group that's been
10 introduced? Was that introduced, Ms. Ferguson?

11 COURTROOM DEPUTY: It's 208 what?

12 THE COURT: D.

13 COURTROOM DEPUTY: Yes. A through K was
14 introduced.

15 THE COURT: So that should be in there.

16 MR. CAWLEY: Should be.

17 MR. CAMPBELL: Should be.

18 THE COURT: Are they arranged by exhibit
19 number and everything?

20 MR. CAWLEY: Our copy of it does.

21 THE COURT: Let me see that.

22 MR. VAN NEST: Are we sure? The D
23 letter, does that mean it's a demonstrative?

24 MR. CAMPBELL: No. It was source code.

25 MR. CAWLEY: It's right here.

1 THE COURT: Is that a copy of 208-D? Let
2 me see that.

3 Let me have the note for Ms. Ferguson,
4 please.

5 Did Defendant have a chance to see this?

6 MR. VAN NEST: No.

7 THE COURT: Please take a look at that.

8 Ms. Ferguson, if you would --

9 Ms. Ferguson, if you would hand that to -- let them take
10 a look at that.

11 MR. VAN NEST: Your Honor, is there a
12 clean copy of this? This has handwriting, I think, by
13 counsel.

14 THE COURT: Just that notation about how
15 to answer Question No. 1.

16 [Laughter]

17 MR. VAN NEST: That must have been some
18 conference call you had.

19 MR. STEVENSON: This is the one I did at
20 the podium, which, I guess, turned it into a
21 demonstrative; but it's the one I notated while I was --

22 MR. VAN NEST: Can we --

23 THE COURT: Yeah.

24 MR. VAN NEST: Can we get a clean copy?

25 THE COURT: We need one with -- just like

1 they have. Do you have an unmarked --

2 MR. STEVENSON: I have a limited supply.

3 I know I produced one that is the copy that was in
4 evidence, and I produced one to the Defendant that I
5 also didn't get back, and I think that exhausted my --

6 MR. VAN NEST: I have mine, but it's
7 across the street at our trial site, but I can get it
8 here in just a few minutes.

9 COURTROOM DEPUTY: Judge, they should
10 have it in there.

11 THE COURT: Let me have another note.

12 COURTROOM DEPUTY: We can go look.

13 THE COURT: All right.

14 All right. I'm just going to send this
15 note in: You should have Plaintiffs' Exhibit 208-D in
16 your exhibit box.

17 But if there is no objection, I will have
18 Ms. Ferguson send the note in and see if she can help
19 them locate it.

20 Is there any problem with that?

21 MR. VAN NEST: No problem, Your Honor.

22 MR. CAMPBELL: No problem.

23 THE COURT: All right, Ms. Ferguson.

24 Here is the note and -- and if they can't -- if for some
25 reason it's not there, come back and let me know, and we

1 will get them another copy.

2 Be in recess.

3 COURT SECURITY OFFICER: All rise.

4 (Jury deliberations continue.)

5 COURT SECURITY OFFICER: All rise.

6 THE COURT: Please be seated.

7 All right. I understand everybody
8 finally found a copy of 280-D, and we've sent that in
9 with a note to the jury apologizing for taking so long;
10 so, they have that now.

11 And I believe both sides had reviewed
12 that, had you not?

13 MR. VAN NEST: Yes, we have Your Honor.

14 MR. STEVENSON: Yes, Your Honor.

15 THE COURT: Okay. All right. Who will
16 be your first witness?

17 MR. DAUCHOT: Dr. Shoemake, Your Honor.

18 MR. DE VRIES: And, Your Honor,
19 Defendants also have a list of agreed upon pre-admitted
20 exhibits for the bench trial. With Your Honor's
21 permission, I'd like to hand that up.

22 THE COURT: All right. All right. And
23 what is that labeled?

24 MR. DE VRIES: It's Defendants' List of
25 Pre-admitted Exhibits for June 12th, 2013, Bench Trial.

1 THE COURT: Okay. Proposed pre-admitted?

2 MR. DE VRIES: That's correct.

3 THE COURT: Okay. I'm about to admit
4 them.

5 All right. Any objection?

6 MS. MOORE: No, Your Honor.

7 THE COURT: All right. The exhibits on
8 Plaintiffs' proposed exhibits for bench trial which
9 we'll mark as Defendants -- I'm sorry Defendants'
10 Exhibit list, we'll mark as Defendants' Exhibit No. 7 --
11 Exhibit List No. 7, and there being no objection, those
12 exhibits are admitted for the bench trial only.

13 All right. Plaintiffs have a similar
14 list?

15 MS. MOORE: Yes, Your Honor. It's titled
16 Plaintiff's Pre-admitted Exhibit List for the June 12th,
17 2013, Bench Trial.

18 THE COURT: Okay. We'll mark that as
19 Plaintiffs' Exhibit List No. 7.

20 And any objection to those exhibits?

21 MR. DE VRIES: No, Your Honor.

22 THE COURT: All right. They will be
23 admitted for the bench trial only.

24 All right. You may proceed, Counsel.

25 MR. DE VRIES: Thank you, Your Honor.

1 MATTHEW SHOEMAKE, Ph.D., DEFENDANTS' WITNESS,

2 PREVIOUSLY SWORN

3 DIRECT EXAMINATION

4 BY MR. DE VRIES:

5 Q. Good afternoon, sir.

6 A. Good afternoon.

7 Q. Would you please introduce yourself.

8 A. I'd be happy to. My name is Matthew Shoemake.

9 Q. Dr. Shoemake, please tell us about your
10 background.

11 A. I'd be happy to. I am currently the CEO of
12 Biscotti, Inc., in McKinney, Texas. I'm originally from
13 the Texas area. And my educational background is,
14 undergrad, I went to Texas A&M University in College
15 Station, Texas. I received -- I double majored there in
16 electrical engineering and computer science. I
17 graduated with honors.

18 And after that, I went to Cornell University
19 in Upstate New York and studied electrical engineering
20 there, as well, and received a Master's degree and a
21 Doctorate degree.

22 Q. Dr. Shoemake, have you been involved in the
23 802.11 standards development process?

24 A. I have.

25 Q. In -- in what way?

1 A. Well, I was involved early on. I got involved
2 in 802.11 in late 1997, 1998. I was involved in the
3 802.11a and "b" standards development activities.

4 I was also elected as the chairman of 802.11g,
5 so I was the chairman of 802.11g from 2000 to 2003, and
6 I was the first chairman of the 802.11n as well.

7 Q. Dr. Shoemake, have you had any experience
8 working on 802.11 products?

9 A. I have.

10 THE COURT: Counsel, let me just stop you
11 for a moment and inquire if Dr. Shoemake has been sworn.

12 MR. DE VRIES: I do not believe so, Your
13 Honor.

14 THE COURT: All right. If you would
15 raise your right hand to be sworn, please.

16 (Witness sworn.)

17 THE COURT: Was everything you just
18 testified to true?

19 THE WITNESS: It was. And, Your Honor, I
20 was sworn in on Monday as well.

21 THE COURT: Oh, you were?

22 THE WITNESS: I'm sorry.

23 THE COURT: You're doubly sworn.

24 THE WITNESS: Sorry.

25 THE COURT: All right. You may proceed.

1 MR. DE VRIES: Thank you, Your Honor.

2 Q. (By Mr. De Vries) Now, Dr. Shoemake, I had
3 asked you if you had experience working with 802.11
4 products?

5 A. Yes, I have.

6 Q. And what experience is that?

7 A. Well, I got involved in 802.11 products in
8 1997, and then in 1998, I joined a startup company in
9 California. It's actually in the San Francisco Bay
10 area. It was named Alantro Communications, and we built
11 802.11 products there.

12 That company was -- in 2000 was acquired by
13 Texas Instruments, and I actually moved back to Texas
14 then. And inside Texas Instruments' R&D center in
15 Dallas, I ran a branch of their R&D center that
16 specifically focused on wireless LAN or 802.11 Wi-Fi
17 technology, and led a team of engineers there.

18 Q. And what type of 802.11 products did you work
19 on at Alantro in TI?

20 A. Well, semiconductor chips specifically. So
21 semiconductors compliant with the 802.11 standard.

22 Q. Now, your work at Biscotti, does that involve
23 802.11 in any way?

24 A. Well, it does. At Biscotti, we don't build
25 the chips, we build an end-consumer product, a video

1 calling camera. But we have two generations of
2 products. They both include Wi-Fi technology.

3 The first generation includes 802.11g
4 technology, and the current or second generation
5 includes 802.11n technology.

6 Q. Now, Dr. Shoemake, I'd like to ask you about
7 your time working in the 802.11 standards development
8 process, including when you had leadership positions in
9 that process.

10 What goals, if any, did the IEEE have in
11 developing 802.11?

12 A. Well, we had several goals. One of the
13 biggest goals was interoperability. In fact -- by the
14 way, I have some slides on this. The -- and they're
15 shown here.

16 One of the biggest goals was interoperability.
17 One of the things that we -- we could not do
18 unilaterally as companies was -- was -- to have
19 interoperability, so we needed to come together in a
20 standards body and work together to set a standard so we
21 could have interoperability.

22 And by interoperability, you can see on this
23 slide I mean being able to take your Wi-Fi and it -- it
24 work in your home and in the office and in a restaurant
25 and a hotel.

1 Another one that was very important for us,
2 it's shown as No. 2 on the slide, is to make sure we had
3 enabled a solution that was -- that was very low cost.

4 And this was important to us so the technology
5 could go into -- to a lot of places and a lot of
6 different types of devices.

7 And related to that I have here No. -- No. 3,
8 which is broad market accessibility, and that means
9 we -- not only did we want the technology -- I show a
10 blow-up here -- not only did we want the technology to
11 go -- be able to be used around the world, we also
12 wanted it to be used in a lot of different types of
13 devices.

14 Q. Now, Dr. Shoemake, in your experience, are
15 there any patents that are related to the 802.11
16 standards?

17 A. Oh, there are. I mean, in fact, I -- I'm
18 inventor on patents that are essential to 802.11.

19 Q. And how does that fact relate to the IEEE's
20 goal of broad accessibility in terms of 802.11?

21 A. Well, it's -- it's potentially an issue for
22 us, because what we want to do is we want to come
23 together, enable a standard, select technology, and then
24 enable these goals that -- that I talked about; but
25 standards can -- I'm sorry -- patents can be a barrier

1 because a patent is a right to prohibit someone from --
2 from manufacturing or selling. So it actually is an
3 issue for us.

4 Q. And how, if at all, did the IEEE address that
5 issue?

6 A. Well, the IEEE has been addressing this for a
7 long time, even before I -- I was involved. There's an
8 IEEE patent policy and all members, it creates a duty
9 for members to -- I have a slide on this as well. So it
10 creates a duty on members to -- to abide by certain
11 rules.

12 Q. And in general, what do those rules say?

13 A. Well, you can see in the slide here, on the
14 bottom left side is actually the front cover of the IEEE
15 Standards Association Patent Policy. And I've
16 highlighted one thing here.

17 One of the things it does on -- and this is
18 communicated regularly to members at meetings -- is that
19 there is a -- a duty to -- to provide assurances, and we
20 do this, you can see here, through your request, letters
21 of assurance.

22 We have a -- on approved letter assurance
23 form. And what that letter of assurance or promise does
24 is it -- it requires members to license to an unlimited
25 number of people that would like access to the patents

1 on reasonable and non-discriminatory terms.

2 Q. In the document that your slide refers to as
3 DX 550 -- is that right?

4 A. That's correct.

5 Q. Now, can you please explain to us, Dr.
6 Shoemake, what a letter of assurance is?

7 A. Sure. And I have some examples in here as
8 well.

9 But a letter of assurance is -- is basically a
10 promise, it's an agreement, and the IEEE has a standard
11 form for this. It makes it very easy. The IEEE is a
12 very -- has a very open process, and -- and it's part of
13 our open process.

14 We have a form that allows members and
15 participants, and even people that don't participant, to
16 easily comply with the policy. It allows the -- the --
17 the entity that -- that may have a patent or wants to
18 provide an assurance, to list who they are and to -- and
19 to actually officially state their assurance.

20 Q. Now, can a letter of assurance be revoked?

21 A. Oh, no, it cannot. In fact, in the IEEE
22 Standards Association Bylaws, Section 6, this is
23 specifically addressed; and it specifically states that,
24 hey, a letter of assurance is irrevocable during the
25 period that the standard is active.

1 Q. Now, I'd like to ask you about Ericsson in
2 particular.

3 Did Ericsson submit a letter of assurance for
4 802.11?

5 A. They did, and I have it in my slide deck here
6 I believe.

7 Yes, this is it.

8 Q. Okay. Now, what, if anything, did Ericsson
9 promise to do in its letter of assurance for 802.11
10 which has been marked as DX 19?

11 A. Sure. So, again, you can see on the left side
12 here is actually the letter of assurance. It's smaller
13 than what I've done, as I made some things larger so you
14 can see them. So you can see that this is a -- a letter
15 from Ericsson and you can see it release to 802.11n.

16 The answer to your question is actually on the
17 second slide, so maybe we can go to that. This
18 addresses your question which is what -- what was
19 promised.

20 And so you can see that -- you can see that
21 Ericsson selected a few things here. They selected
22 Item 1 and they also selected sub-item b, and sub-item
23 b, I think, addresses your question.

24 So they -- they promised that they would grant
25 licenses at -- at reasonable rates, and I've underlined,

1 too, an unrestricted number of applicants, and also on
2 reasonable terms that are demonstrably free of unfair
3 discrimination.

4 Q. Now I'd like to ask you about Ericsson's
5 promise that you just referred to. Is that standard
6 language from the IEEE?

7 A. It is. This is a standard form from the IEEE.

8 Q. Now, anywhere in Ericsson's letter of
9 assurance for 802.11n did Ericsson say that it was not
10 going to provide a license to chip makers?

11 A. No, they did not.

12 Q. Okay. And how would have -- how would the
13 IEEE have reacted if Ericsson, in its letter of
14 assurance, had said it was going to provide a license to
15 its patent to an unrestricted number of applicants
16 except for chip makers?

17 A. Well, I think that would have been met with a
18 quite negative response. I think that it's very likely
19 that the -- the letter would have been rejected and
20 certainly the membership, the voting members of 802.11
21 would have resisted that. I actually think it would
22 have brought 802.11 standards development to a halt
23 until the issue was resolved.

24 Q. And why do you believe that, Dr. Shoemake?

25 A. Well, because you have to understand chip

1 makers are a main contributor to 802.11 development.

2 802.11 technology ends up in the chips and
3 they make significant contributions. They submit
4 letters of assurance themselves, expecting to be able to
5 participate in this agreement, this overall philosophy
6 and -- and this policy, the IEEE's policy.

7 And the -- the thought that they would
8 contribute to the standard in their IP and submit their
9 letters and not be able to participate in that is -- is
10 something that they would have objected to.

11 Q. Is this an issue that you ever experienced
12 while working on 802.11 chips yourself during the
13 standards development process?

14 A. Yes.

15 Q. Please share with us.

16 A. Well, I can give you one example. I mentioned
17 before that I worked for Alantro Communications, a
18 startup company in California, and I participated in the
19 development of 802.11b and 802.11a and, in fact, have
20 technology in 802.11b.

21 And again, IEEE is an open, consensus-based
22 organization; and there was a point in time where we got
23 over the 75 percent threshold, which was an important
24 phase. And after that meeting, I went back to Alantro
25 and had a discussion with our president, Eric Rossin,

1 and he was specifically asking about the intellectual
2 property agreements and the RAND statements, and -- and
3 I reported back to him that we, as Alantro, would be
4 able to depend on those RAND statements that had been
5 submitted by other members.

6 Q. And Alantro was a -- was a Wi-Fi chip maker at
7 the time; is that correct?

8 A. That's correct.

9 Q. Is there any question in your mind, Dr.
10 Shoemake, that when Ericsson submitted a letter of
11 assurance to 802.11n promising to license its patents to
12 an unrestricted number of applicants, is there any
13 question that that promise to license also extended to
14 chip makers?

15 A. There's no question in my mind.

16 Q. Now I'd like to briefly ask you about a couple
17 of more things.

18 Do you understand that Ericsson has said that
19 it's asking for a rate in -- of 50 cents in this case?

20 A. I do.

21 Q. I'd like to ask you about your experience in
22 the 802.11 standards development process that, in terms
23 of cost and performance in those tradeoffs, would you
24 please share with us your experience with respect to
25 that issue?

1 A. Well, I'd be happy to. I brought two, if not
2 three, examples and I have some slides on this topic as
3 well.

4 So in -- in general, we had a lot of decisions
5 and options to -- to choose between at -- at -- at key
6 stages of standard development. And remember, we had 50
7 to a 100, sometimes 200 engineers in the room with --
8 with a lot of ideas, and so the -- the trick for us was
9 deciding what we were going to select, not coming up
10 with options.

11 And so this example that I have on the screen
12 right now is an example related to 802.11b. 802.11b
13 started off with something like five or six proposals
14 and got down to a few. One of them was a higher
15 performance option named PBCC, but it was going to cost
16 a bit more and -- and then there was one named CCK and
17 it was lower performance, but it was lower complexity
18 and thus lower cost.

19 And even though the cost difference was -- was
20 small, the body decided to make CCK mandatory and went
21 down that path.

22 Q. And so the 802.11 made the CCK option
23 mandatory and the PBCC option optional; is that right?

24 A. That -- that's accurate.

25 Q. And what is your best estimate of the

1 difference in cost between those two approaches?

2 A. Well, that was actually discussed in the
3 development process and -- and various estimates were
4 made. There were estimates of 50,000 gates, and I
5 remember estimates of 40 to 80,000 gates. By the way, a
6 gate you can think of as a -- as a -- as a device that's
7 down on the chip that does computations. And so we as
8 engineers would measure the complexity in gates.

9 And so the estimate at the time was that --
10 that 50,000 gates may have been a cost to add one -- one
11 to two cents, in that ballpark.

12 Q. Are you familiar, Dr. Shoemake, with
13 circumstances in which the IEEE 802.11 standards body
14 considered the cost of proposed -- proposed patent
15 licenses?

16 A. I am. I mentioned that I had a few examples.
17 I have some examples on the next slide as well. Two
18 examples. I'd be happy to go through them.

19 Q. Please do.

20 A. The first example is from the 1994/1995 time
21 frame, so this is actually with the original 802.11
22 standard before even 802.11a and "b" were ratified.

23 There was a professor, a Dr. Feher, he was a
24 professor at the University of California-Davis, and he
25 came to 802.11 and proposed some technology, and he told

1 the body that the -- the license fee would be 10 cents
2 per unit if he decided -- if the body decided to adopt
3 that technology.

4 And at that rate, the body actually decided
5 not to adopt the technology into the standard.

6 The -- the second example I have up here is in
7 a -- in a different time frame again, in the 802.11a
8 time frame. So this is 1997 to 1999. Lucent proposed
9 some technology into the 802.11a standard, and they
10 suggested that their royalty rate would be 5 percent of
11 the end cost of the product.

12 And just to be clear, 5 percent of the end
13 cost, like the notebook computer and access point,
14 rather than the cost of a component like the Wi-Fi chip
15 where the technology is -- and in this example the
16 members of 802.11 pushed back again and the result was
17 that Lucent clarified its position, changed its position
18 to say that any royalty would be attached to -- at the
19 component or chip level rather than at the end product
20 level.

21 Q. Now, how do the items that you just mentioned
22 where 802.11 was considering the cost of the technology
23 or patent impact, if at all, your beliefs about what it
24 means for a rate to be reasonable under a letter of
25 assurance?

1 A. Well, it informs a lot of things. I have an
2 opinion that necessarily a reasonable rate is a small
3 number of cents, if not smaller. And it -- and also an
4 opinion that the -- the rate should be attached kind of
5 on the least common denominator where the -- where the
6 technology is and these, I think, support that opinion
7 in showing how the -- how the members behaved and how
8 they looked at this as well.

9 Q. What is your belief, if any, about how the
10 IEEE would have reacted if Ericsson had said at the time
11 of standard adoption that it was going to charge 50
12 cents for its patents for the claims to be in the
13 standard?

14 A. I have some slides on this topic as well.
15 It's my opinion that they absolutely would have gone
16 down an alternative path; and that 50 cents would not
17 have been acceptable.

18 Q. Okay. I would like to ask you about two more
19 items. First, how many different technologies are
20 included in 802.11, roughly?

21 A. Well, I think conservatively hundreds, more
22 likely thousands.

23 Q. Okay. Do you have an opinion about the
24 percent of a Wi-Fi chip that is -- that is described by
25 or mandated by 802.11?

1 A. I do. I spent a significant amount of time
2 developing these chips, and I have a slide related to
3 this topic. I'd be happy to go through it for you.

4 Q. Please do.

5 A. Well, if -- if you look inside, for example, a
6 typical product such as a notebook computer, you'll find
7 a small card. That's the green card down at the -- the
8 bottom.

9 You will find a chip, sometimes chips, but in
10 this case I showed a single chip, that includes the
11 technology that really implements 802.11 or Wi-Fi.
12 There are a lot of technologies in that.

13 Just to point out, you can see I called out
14 there input/outputs on the bottom. These tend to be
15 connectors to allow the -- the chip to connect with the
16 rest of the device it's in, such as a notebook computer.

17 Inside the chip there's semiconductor
18 technology, and that semiconductor technology will
19 have -- is implemented on what's called a die, there's a
20 die, and it has different functions in it.

21 So, for example, there will be interface logic
22 that is -- that allows the chip to communicate with
23 the -- with the rest of the system. There will be
24 memory. There also would be a radiofrequency or analog
25 section that I've shown on the -- on the top.

1 And then there would be a portion of the chip
2 that relates to the -- that is actually specified by the
3 802.11 standard, and I've shown that here in blue.

4 Q. And what amount, if any, do you believe that
5 the portion that's specified by 802.11 -- and I'm
6 talking about the portion of the Wi-Fi chip, what
7 portion do you believe that to be?

8 A. Well, based on my experience, it's typically
9 about 35 percent of the chip, about a third of the chip.

10 Q. Now, is all of that 802.11 portion of the chip
11 802.11n?

12 A. Oh, no, it's not. 802.11 has been developed
13 over about 23 years now, and 802.11n is just -- just a
14 portion of that.

15 Q. And what portion of the 802.11 aspect of the
16 Wi-Fi chip do you believe is related to 802.11n?

17 A. Well, I've looked at that and I looked at
18 different factors and different metrics and -- and I
19 think conservatively it's easy to say that less than
20 half of the 802.11 specification relates to 802.11n.

21 Q. And that also is your estimate of the portion
22 of the 802.11 aspect of the chip that relates to
23 802.11n.

24 A. Well, I've looked at different metrics. I've
25 looked at everything from -- the answer to your question

1 is yes, and I -- and I've looked at the -- the area and
2 technology and even things like page count. They all
3 indicate that it's well less than 50 percent.

4 Q. Now, Dr. Shoemake, have you analyzed how many
5 patents are related to the 802.11n standard?

6 A. I have.

7 Q. What sources of information did you consider
8 in conducting that analysis?

9 A. Well, I have some slides on this topic as
10 well. Maybe we can go to them.

11 So I looked at market reports. There's some
12 third-party market reports that -- that I looked at. I
13 also did an independent search myself and even looked at
14 802.11n contributions as well.

15 Q. What market reports did you look at?

16 A. I looked at a couple of market reports. One
17 of them is known as the Sunlight report and there's
18 another one known as TechIPm.

19 Q. For the record, the Sunlight report is at DX
20 157 through 159, and DX 162 to 164; the TechIPm report
21 is at DX 149.

22 How, if at all, did you analyze those
23 reports, Dr. Shoemake?

24 A. Well, with respect to the Sunlight report, the
25 Sunlight report you can see here listed over 4,000

1 patents related to 802.11n; but since it was done by a
2 third party, I wanted to verify that. So what I did
3 was, I went myself through and chose patents randomly.
4 I -- and analyzed them.

5 I was able to analyze 128 of them, and -- and
6 to determine if I thought they were related to 802.11n.

7 I determined that about 85 percent of them
8 that I -- that I looked at were actually related to
9 802.11n, so I think that's about thirty -- 3400.

10 And based on my -- my sampling, I think I
11 calculated a confidence interval of about plus or minus
12 8 percent.

13 Q. Now, let me ask you about the independent
14 search that you performed. Please describe that.

15 A. Well, what I did with the independent search
16 is I wanted to kind of start from the beginning and --
17 and myself and -- and come to my own conclusions. So,
18 with the independent search, I formed search strings.

19 And maybe I can back up.

20 The U.S. Patent & Trademark Office has a
21 website. The website allows you to input search strings
22 to look for patents. And they have an advance search
23 which allows you to put in more complex criteria for
24 doing searches. And so I used their -- their website,
25 and I constructed search sequences that -- that in my

1 experience and in my expertise would help me find
2 patents related to -- to 802.11.

3 And then I did the search and then I looked at
4 the patents and then I iterated and updated my -- my
5 search string to try to increase the accuracy.

6 Q. Based on all the sources that you looked at,
7 what opinion do you have about the number of 802.11n
8 related patents?

9 A. Well, based on -- on my analysis and
10 everything I looked at, I -- I think it's -- it's safe
11 to say that there are over 3000 patents that -- that
12 relate to 802.11n.

13 Q. Thank you, Dr. Shoemake.

14 MR. DE VRIES: I pass the witness.

15 THE COURT: All right. Cross-exam.

16 CROSS-EXAMINATION

17 BY MR. CAWLEY:

18 Q. Good afternoon, Dr. Shoemake. The draft 2.0
19 of the 802.11n standard was approved in 2007; is that
20 right?

21 A. I believe that's correct.

22 Q. And then finalized in 2009?

23 A. Yes. Ratified in 2009.

24 Q. Okay. But it's true, isn't it, that you
25 stopped attending 802.11 meetings in 2004?

1 A. That's correct.

2 Q. And it's also true that your company that
3 you're with now, Biscotti, doesn't have anyone that goes
4 to the 802.11 meetings?

5 A. That's accurate.

6 Q. Now, when members of a 802.11 meeting group
7 decide what to put into the standard, they may be aware
8 that what they put in is patented, true?

9 A. Could you repeat the question?

10 Q. Yes, sir.

11 When members of an 802.11 meeting group decide
12 what to put into the standard, they may be aware what
13 they put in is patented?

14 A. There might be awareness.

15 Q. Okay. And, in fact, I know the time is short
16 here, and we all want to move along. You showed us a
17 document earlier, DX 550. You remember that? It's
18 the -- it's the first textual page of the patent policy?

19 A. Yes.

20 Q. If I told you that that very first line of the
21 patent policy cautions people that the standard may
22 include essential patent claims, you wouldn't disagree
23 with that, would you?

24 A. I would not.

25 Q. Now, you just testified that you undertook a

1 study and did some research to determine how many
2 patents relate to the 802.11 standard, correct?

3 A. That's correct.

4 Q. And you concluded that thousands of patents
5 relate to the standard, right?

6 A. That's correct.

7 Q. Did you try to determine how many patents are
8 essential to the standard?

9 A. That's a much more difficult task. I did not.

10 Q. You did not do that. Okay.

11 Now, let's also -- I'd like to put in context
12 just briefly the RAND obligation that you've testified
13 about.

14 Now, the IEEE is not a governmental or a quasi
15 governmental body, is it?

16 A. It's not. It's a U.S. not-for-profit
17 organization.

18 Q. Okay. It doesn't have the ability to make
19 laws, for example?

20 A. Not that I'm aware of.

21 Q. It doesn't have the ability to take people's
22 property without their permission?

23 A. I don't think it does.

24 Q. So, the IEEE relies on agreements to comply
25 with RAND terms. Would you agree?

1 A. Yes, I would agree with that.

2 Q. And you agree that a party, such as Ericsson,
3 could limit the commitment that it makes?

4 A. In -- potentially in -- in certain ways.

5 Q. Well, for example, could a party participating
6 in the IEEE making a declaration of essential patent
7 claims to the IEEE say, I'm going to make the letter of
8 assurance applicable to certain patents but not others?

9 A. Well, I think the -- the IEEE right now, that
10 would probably be difficult to do because the letter of
11 assurance gives you a couple of options, and it sounded
12 like that would be selecting two options, right? One
13 to -- to not license and one to license, if I understood
14 your -- your question correctly.

15 Q. Well, what's to stop a company from going to
16 the IEEE and saying: You know what, I've got two
17 patents and I'm going to give you a letter of assurance
18 applicable to Patent No. 1, but I'm not giving you any
19 assurance about Patent No. 2?

20 A. They could do that. It might require
21 submitting two letters of assurance, one saying no and
22 one saying yes.

23 Q. Okay.

24 A. But -- but it could potentially be done.

25 Q. So they could limit their commitment in that

1 way. You agree?

2 A. Well, again, it would depend on -- I guess I'd
3 have to see the exact example. But there's some things
4 that the IEEE won't agree to such as letters being put
5 in that -- that exclude parties or discriminatory but --

6 Q. Well, but we're not looking to the IEEE to
7 agree, are we? We're looking to the extent to which the
8 owner of the patent is willing to limit their patent
9 rights by making an agreement, correct?

10 A. That -- that may be a question of law.

11 Q. Okay. That's fair enough.

12 But on the same subject, you do agree, for
13 example, that a company like Ericsson could insist on
14 reciprocity as a condition of licensing?

15 A. With respect to the standard letter at this
16 time, I -- it's my understanding the IEEE does not allow
17 that to be modified.

18 I do know that at a point in the past they
19 would allow that, and I think you can actually find
20 letters that -- that have that.

21 But with respect to the -- the current letters
22 of assurance, such as the one that Ericsson -- Ericsson
23 signed, I believe the IEEE encourages you to use that --
24 that exact form.

25 Q. Okay. But just to move this along, you

1 remember when I asked you -- or I didn't ask you --
2 someone asked you that question in your deposition if --
3 if a patent holder could insist on reciprocity as a
4 condition of licensing, and you agreed that they could,
5 didn't you?

6 A. The -- I don't think that the IEEE, at least
7 historically, has rejected letters based -- based on
8 that.

9 Q. You don't think they historically have
10 rejected letters?

11 A. I'm sorry. I used a double negative. I
12 apologize. The -- the letters have been accepted
13 with -- with that -- with that condition.

14 Q. Okay. Good.

15 So, in that sense, that commitment would be
16 defined by what the patent owner is willing to commit
17 to?

18 A. I'm sorry. I didn't follow your question.
19 Could you restate it?

20 Q. Yes, sir. If the patent owner wants to
21 qualify or limit its letter of assurance to require
22 reciprocity, you've said that -- that that's happened in
23 the past?

24 A. It has happened in the past, that's correct.

25 Q. Now, you -- you told us about the letter of

1 assurance that Ericsson sent at the request of the IEEE
2 in 2011. You remember that testimony?

3 A. Yes. I think you're talking about the -- the
4 April letter, yes.

5 Q. Yes, sir. But that was a second letter of
6 assurance that Ericsson had sent to the IEEE, wasn't it?

7 A. It was.

8 Q. They sent an earlier one in 2003, correct?

9 A. That's correct.

10 Q. And in that letter, they appended a statement
11 limiting or at least qualifying the scope of their
12 commitment, didn't they?

13 A. They -- they certainly attached a -- a letter.
14 I'm not sure the -- the degree to which they -- they
15 qualified or limited it.

16 Q. Okay. But we've seen that exhibit already. I
17 won't take the time to pull it up now. But -- but you
18 recognize that Ericsson, in addition to filling out the
19 IEEE form, in that first letter of assurance had some
20 other things to say about what they were committing to?

21 A. I agree with that in their 2000 letter, yes.

22 Q. All right, sir. And you also agree that it's
23 the position of the IEEE that they may continue to rely
24 on letters of assurance like that all the way through
25 the standard setting process?

1 A. Yes. Reliance on those letters is a -- is a
2 key point.

3 Q. Okay. Now, one of the features of these
4 letters of assurances to the IEEE is an assurance of
5 non-discrimination, correct?

6 A. Yes, that's correct.

7 Q. Okay. And in this context, the RAND assurance
8 of non-discrimination means that the intellectual
9 property costs for products compliant with the standard
10 will be equal to or no more burdensome than the cost of
11 a competitor.

12 You agree with that, don't you, if you put it
13 in your report?

14 A. Yes, I do.

15 Q. Okay. And you understand, just to put all
16 this in context, that Ericsson has offered to license
17 Intel? Have you heard that testimony?

18 A. I -- I've heard that -- that Ericsson has
19 asked for a 50-cents license fee, so I assume that means
20 they -- they've offered to license at that rate.

21 Q. Okay. What is the -- if you know, what is the
22 current total royalty on Intel 802.11n chipsets?

23 A. I don't know.

24 Q. Thank you.

25 MR. CAWLEY: Pass the witness, Your

1 Honor.

2 THE COURT: Any redirect?

3 MR. DeVRIES: Yes, Your Honor. Just
4 briefly.

5 REDIRECT EXAMINATION

6 BY MR. DE VRIES:

7 Q. Dr. Shoemake, you were asked about leaving the
8 802.11 standards body in 2004. At that time, how many
9 years had you been involved in developing the 802.11
10 standards?

11 A. About seven.

12 Q. And what was your position in 2004 when you
13 stopped associating with the 802.11 standards body?

14 A. I was the chairman of the 802.11n task group.

15 Q. Now, you were asked about the analysis you
16 conducted about the number of patents related to
17 802.11n. I just have one question for you.

18 Do you believe that your analysis of that
19 issue is a reliable indicator of the number of patents
20 that may be essential to 802.11n?

21 A. I do. I think it's a good proxy.

22 Q. Okay. Now, you were asked about a 2003 letter
23 that Ericsson submitted to 802.11. Do you recall that?

24 A. Yes.

25 Q. Okay. Now, that's a different letter than the

1 one that Ericsson submitted to 802.11n; isn't that
2 right?

3 A. That's correct.

4 Q. Is there any limitation, Dr. Shoemake, in
5 Ericsson's letter of assurance to 802.11n where Ericsson
6 says: We are not going to license chip makers?

7 A. No, there's none there.

8 Q. Are you aware of any circumstance at the IEEE
9 in which someone limited their letter of assurance to
10 require a cross-license not from the party that's going
11 to be licensed but from that party's customers?

12 A. I have never seen that.

13 Q. Okay. And is it fair to say that one of --
14 that one goal of the IEEE is that -- for any limitation
15 on the RAND promise to be clearly spelled out so that
16 that could be discussed and resolved at the time?

17 A. Yes. If it -- if it's not, it creates a
18 problem for the -- the system. I mean, one of the
19 things we're trying to do is create an environment where
20 people can be free -- free to operate. And if the terms
21 aren't called out at the time and votes are taken on it,
22 that's quite problematic.

23 MR. DeVRIES: I have no further
24 questions, Your Honor.

25 THE COURT: All right. Anything further?

1 MR. CAWLEY: I have nothing further, Your
2 Honor.

3 THE COURT: All right. Any members of
4 the audience have a question for this witness?

5 [Laughter]

6 THE COURT: No?

7 All right. Thank you. You may step
8 down.

9 THE WITNESS: All right. Thank you,
10 Judge.

11 THE COURT: All right. Who will be next?

12 MR. ALPER: Your Honor, the Defendants
13 call Dr. Chris Heegard.

14 THE COURT: Okay.

15 MS. MORGAN: Good afternoon, Your Honor.
16 Christine Morgan on behalf of Defendants.

17 May I proceed?

18 THE COURT: Yes, you may.

19 CHRIS HEEGARD, Ph.D., DEFENDANTS' WITNESS,

20 PREVIOUSLY SWORN

21 DIRECT EXAMINATION

22 BY MS. MORGAN:

23 Q. Go afternoon, Dr. Heegard.

24 A. Good afternoon.

25 Q. You're here today to talk about certain

1 alternatives to the accused features of the 802.11n
2 standard; is that right?

3 A. That's right.

4 Q. And before you get into your opinions, have
5 you made certain assumptions in reaching the opinions
6 you're here to testify about today?

7 A. Yes, I have.

8 Q. What assumptions have you made?

9 A. So my understanding of the question that I'm
10 addressing is that, although I may not personally
11 believe the patents are being infringed, I have studied
12 the Plaintiffs' arguments about how products are being
13 infringed by 802.11.

14 And so I've looked at the question of how --
15 at the time the standard was being ratified, how the
16 standard could have been designed to not infringe the
17 alleged activities that -- that Ericsson says makes the
18 products infringe.

19 Q. So you've assumed infringement for purposes of
20 your analysis?

21 A. I've adopted the Plaintiffs' explanation of
22 how the products infringe and used that as a basis to
23 ask the question, well, if that is an infringing
24 activity, what could you do to -- as an alternative to
25 that.

1 Q. And what are your opinions about whether there
2 were non-infringing alternatives available at the time
3 the standard was being developed?

4 A. My opinion is that for all five patents, there
5 were viable alternatives that the standards body could
6 have used at the time they were setting the standard
7 that would not infringe.

8 Q. All right. And you testified during -- in
9 front of the jury about your background and your company
10 Alantro. Is it fair to say that based on your
11 experience with Alantro, you're knowledgeable about how
12 to design and make 802.11-compliant chips?

13 A. I think I am, yes.

14 Q. All right. Well, with that background in
15 mind, let's turn to your opinions.

16 First of all, what did you consider to be the
17 relevant timeframe for assessing whether non-infringing
18 alternatives exist?

19 A. I used the timeframe of 2006 to 2007. That's
20 when the 11n standard was really being put together.

21 Q. And the alternatives that you've identified,
22 were those available during that timeframe?

23 A. Yes. They were all available at that
24 timeframe.

25 Q. All right.

1 MS. MORGAN: Let's on pull up Slide 2, if
2 we could.

3 Q. (By Ms. Morgan) And can you tell us what work
4 you did, Dr. Heegard, in arriving at your opinions?

5 A. Sure. I can do that.

6 I -- of course, I reviewed all the patents. I
7 read the disclosures and studied the claims that were
8 being asserted and the claim construction.

9 I listened to the arguments of the Plaintiff
10 in terms of Ericsson's infringement contentions. And I
11 read Dr. Nettles' reports. I reviewed prior art. As we
12 know, I -- we discussed some of that the other day.

13 I, of course, reviewed the 802.11 standard,
14 and in particular, 802.11n standard. And I spoke with
15 Bill McFarland of Qualcomm Atheros --

16 Q. Okay.

17 A. -- how their parts work.

18 Q. Thank you.

19 MS. MORGAN: Could we have Slide No. 3,
20 please?

21 Q. (By Ms. Morgan) How do the features of 802.11n
22 that Ericsson has accused in this case fit into the
23 overall 802.11n standard?

24 A. The material in all of those patents is, like,
25 related to very minor aspects of 802.11.

1 Q. And -- and why do you say that?

2 A. There are lots of reasons.

3 One reason is that the 802.11 standard has a
4 lot of technology in it. I was involved in developing a
5 lot of the early technology; and I know, for example, in
6 802.11n, a lot of the excitement about 11n was to get
7 the data rate up. And so there was a lot of stuff on
8 the physical layer that was very innovative.

9 The -- the patents at issue involved
10 refinements to very well-known techniques, such as ARQ.
11 ARQ has been known for a really long time.

12 Aggregation of packets; block acknowledgement
13 of packets; QoS and packet prioritization, all of those
14 have been around well before the patents were even
15 applied for.

16 Q. All right. Let's get right to it.

17 MS. MORGAN: Let's pull up Slide No. 4
18 and talk first about the '215 patent.

19 Q. (By Ms. Morgan) What is the non-infringing
20 alternative you've identified with respect to features
21 of 802.11 that Ericsson accuses of infringing the '215?

22 A. Okay. My understanding of the '215 is that
23 Dr. Nettles has pointed to what's called the type
24 identifier field in the packets as being the -- is it --
25 is it making noise? Thank you.

1 There's a requirement in the claim that there
2 be a type identifier field, and he's pointed to two bits
3 in the packet that are the compressed bitmap bit and the
4 Multi-TID bitmap, and he's saying that that's the type
5 identifier field.

6 So the -- the non-infringing alternative is
7 really pretty simple. Since the 802.11 body was
8 interested in just doing compressed bitmap
9 acknowledgements, they could have -- rather than going
10 to the 11e standard and using what they -- had already
11 been defined in the table and just saying let's use the
12 third element of that table, they could have just said
13 we're just going to use block -- compressed bitmap
14 acknowledgements and not send those two bits.

15 Q. All right. And I think you have a couple of
16 slides to describe how this alternative would have
17 worked.

18 MS. MORGAN: Can we pull up Slide 5,
19 please?

20 A. Right. So this is indicating that they could
21 have just not used this table, which was -- had already
22 been developed because they were only going to use -- I
23 guess it's the second element of that table.

24 And at the time they were writing the
25 standard, they certainly could have just said, okay,

1 we're going to just use compressed BlockAck because --
2 since that's all they wanted to use, and they would just
3 not use this table, which would mean -- on the next
4 slide --

5 MS. MORGAN: Next slide.

6 A. -- that you wouldn't send those two bits. You
7 would just -- if you look at the -- at this particular
8 part to the MAC frame, there's nine reserve bits, and
9 they could have just made those 11 reserve bits and not
10 used those bits.

11 Q. (By Ms. Morgan) Would --

12 MS. MORGAN: Let's go back to Slide 4,
13 please.

14 Q. (By Ms. Morgan) Would using this alternative
15 have affected performance?

16 A. Not at all.

17 Q. All right. And why not?

18 A. Because it would perform exactly the way the
19 standard works now. They only use the compressed bitmap
20 acknowledgement, so there -- there really would be no
21 change.

22 Q. All right. And what type of engineering
23 effort would have been involved in implementing this
24 alternative?

25 A. Essentially, zero.

1 Q. And why would this alternative be
2 non-infringing?

3 A. Once you decided to not put those two bits
4 into the packets, there's no type identifier field as
5 required by the claim.

6 Q. Thank you.

7 Let's move to the '223 patent.

8 MS. MORGAN: And if I could have Slide 7,
9 please.

10 A. As part of the '223 patent, my understanding
11 is, only the Intel chips are being accused of
12 infringement and that the chips from four other -- maybe
13 the four other parties that make chips here, Broadcom,
14 Qualcomm, Realtek, and Ralink, none of those chips, in
15 fact, infringe the patent.

16 Q. All right. And you were here when Dr. Nettles
17 testified to that fact in the trial?

18 A. Right. Dr. Nettles admitted that those -- the
19 chips from those four vendors do not infringe these
20 patents -- this patent.

21 Q. All right. Let's move to the '568 patent.

22 MS. MORGAN: And if I could have Slide 8,
23 please.

24 Q. (By Ms. Morgan) What is the non-infringing
25 alternative you've identified with respect to the '568

1 patent?

2 A. It's similar to the -- to the previous one.

3 There is a -- some information that's encoded
4 into the MAC header that need not be there.

5 In this particular case, there's something
6 called -- well, first off, the claim requires a service
7 type identifier. And Dr. Nettles points to the TID
8 subfield as providing the service type identifier.

9 And the TID field, under certain
10 circumstances, basically, lists the priority of the data
11 which is used to determine which queue it sends in.

12 I think there was a lot of discussion about
13 those four queues, and the queue is determined from the
14 TID field.

15 But, in fact, the prior -- the priority
16 information that's in the TID field is not used, once
17 it's left the transmitter.

18 So, although the standards body decided to
19 include that in the header and send it, it really has no
20 application. So it would be very easy for them to just
21 take it out.

22 Q. All right. And I think we have a picture on
23 the next slide of how this would work in practice. Can
24 you explain this?

25 A. Yeah. When a packet was going to be

1 transmitted, the priority number would be used -- it's a
2 little confusing, because there are eight priorities and
3 four queues, so there's some function that says, okay,
4 a -- maps pairs of priorities to the same queue.

5 And so that function can occur. It's all done
6 at the transmitter; and rather than sending that
7 priority number in the packet, it could have just not
8 sent it.

9 Q. All right.

10 MS. MORGAN: And let's go back to Slide 8
11 for a minute.

12 Q. (By Ms. Morgan) Why would this alternative be
13 non-infringing?

14 A. The claim requires that there be a service
15 type identifier field in the packet that identifies
16 something about the -- actually, the type of data in
17 the -- in the payload.

18 And Dr. Nettles has pointed to the TID
19 subfield, the information in that subfield that tells
20 you the priority of the data as being the service type
21 identifier; and by simply not transmitting that, you
22 would not be infringing the claim.

23 Q. And would this alternative have affected
24 performance of the system?

25 A. Not at all.

1 Q. And why is that?

2 A. Because there's no real application I can
3 think of or that anyone else has proposed for using
4 that -- for having that in the packet, because all
5 the -- the purpose of it is at the transmitter, and so
6 it's -- it has no purpose really.

7 Q. All right. Can you move away from the mike a
8 little bit. Thank you.

9 A. Okay.

10 Q. What type of --

11 A. Sorry.

12 Q. That's all right.

13 What type of engineering effort would have
14 been required to implement this alternative?

15 A. Essentially, nothing.

16 Q. Okay.

17 MS. MORGAN: Let's turn to the '625 and
18 '435 patents. And if I could have Slide 10, please.

19 Q. (By Ms. Morgan) For these two patents and the
20 accused functionality of the standard, what
21 non-infringing alternatives did you identify?

22 A. I'm going to -- I actually found a number of
23 them. I'm going to discuss two of them.

24 Q. And what are those two?

25 A. The first one is to simply do aggregation and

1 use the existing legacy 802.11 ARQ protocol, the same
2 protocol that was in the original '97 standard and used
3 through 11g.

4 The second alternative -- and that does not
5 involve a window.

6 The second alternative is to do essentially
7 the same as -- as one, but it's a refinement in that.

8 Rather than just doing an acknowledgement --
9 single acknowledgement, it has a block acknowledgement,
10 which is not so -- also not a non-infringing idea
11 because it preexisted the patent application.

12 Q. Okay. I think you meant to say it also is a
13 non-infringing idea.

14 A. Is a non-infringing idea.

15 Q. You understand that Ericsson, during the
16 course of this case, has claimed at various times that
17 both A-MPDUs and BlockAck requests from the 802.11n
18 standard infringed certain elements of these two
19 patents?

20 A. Right.

21 Q. Do either of the two alternatives that you've
22 identified use block acknowledgement requests?

23 A. So that's a good point. No. The block
24 acknowledgement request is an option in the standard.

25 And so for both of these alternatives, I

1 assume they just took that out of the standard. It's
2 really not needed. There are certain devices that don't
3 even use it, and it's really not essential to the
4 operation of 802.11n, so...

5 Q. All right.

6 MS. MORGAN: Let's pull up Slide 11,
7 please.

8 Q. (By Ms. Morgan) And to give us some context
9 for the alternatives you've identified for these two
10 patents, let's discuss how the prior art 802.11 system
11 worked.

12 First of all, did the prior art 802.11 legacy
13 system use aggregation or BlockAck?

14 A. No. Aggregation and BlockAck wasn't in the
15 original system. It's also not in the two patents.

16 Q. All right. And the prior art system that
17 we're looking at on the slide here, this depiction of
18 how it works, when was that system in place?

19 A. Well, this was developed and worked on by the
20 original 802 group. And I've seen drafts from, say,
21 1995 that had it in it; but, in fact, it was ratified, I
22 think, in the summer of '97.

23 Q. Okay. And can you explain how the prior art
24 system worked?

25 A. Sure. In 802.11, what I'm calling the legacy,

1 the -- is a pretty simple scheme. You send a packet.

2 So I'm illustrating here that X is being sent
3 by the transmitter and the receiver receives X; and so
4 it sends an acknowledgement telling the transmitter that
5 I received X, which, by the way, is what's happening
6 almost all the time.

7 We spent a lot of time trying to figure out
8 what happens when things get lost; but when the system
9 is working properly, most of the packets -- a large
10 majority of the packets are just being sent across and
11 being acknowledged.

12 However, in this kind of a scheme, there are
13 situations where you need to do retransmission. So
14 sometimes you send a packet, and it doesn't get
15 acknowledged, and you send it again, and it
16 acknowledges, and it goes through.

17 Sometimes you get in a situation where the
18 channel is, for whatever reason, busy and multiple
19 attempts to get the packet through are -- fail. And so
20 there's something called a retry limit at the
21 transmitter.

22 And if the number of retries hits the limit,
23 then it's -- gives up on that packet and goes ahead to
24 the next packet. And that's shown here.

25 Q. All right. Was there any deadlock issue in

1 this prior art approach?

2 A. No. On this approach, since the receiver
3 isn't expecting to receive anything, it's just taking
4 what it's being sent. There's no deadlock situation
5 where the receiver is expecting a packet that the
6 transmitter has discarded.

7 And so there's no requirement of the receiver
8 to tell the transmitter to -- or for the transmitter to
9 tell the receiver to move on. It's just, by sending the
10 next packet, it knows I'm moving along.

11 Q. And was there any requirement for a command to
12 receive or a discard message in this system?

13 A. Since deadlock never occurs in here, there's
14 no require -- there's no need for a solution to the
15 problem, which is either commanding the receiver to
16 receive something or to discard something or to
17 calculate that something has been discarded at the
18 transmitter.

19 Q. All right.

20 MS. MORGAN: Let's move to the next
21 slide, please.

22 Q. (By Ms. Morgan) With that context of the prior
23 art system, could you please describe the first
24 non-infringing alternative you've identified,
25 aggregation with single acknowledgement?

1 A. So this Alternative 1 is actually part of 11n
2 and is implemented and is not an accused method of doing
3 aggregation.

4 So in this case, the packets coming into the
5 MAC, the MSDUs, a number of them are put together and
6 sent together on -- in one packet.

7 And then -- so that's illustrated here.

8 There's a transmission in blue that shows four
9 packets going across the receiver. And in normal mode,
10 it's received correctly with no errors, it sends an
11 acknowledgement back saying, yeah, I got all the
12 packets.

13 The exceptional case is when something is sent
14 across, and there's a failure. For example, the second
15 packet might not be -- might not arrive. And so the
16 second packet is an error.

17 In this case, the receiver cannot -- will not
18 acknowledge, because it didn't receive everything; and
19 so it doesn't send the acknowledgement, which tells the
20 transmitter, just like in the legacy one, to -- to send
21 it again, and it sends all four packets again.

22 Q. All right. And what happens in this example
23 we're looking at if the transmission of Packet No. 2
24 doesn't get through?

25 A. Well, it's -- if -- if the next transmission

1 got -- gets through, there will be an acknowledgement.

2 If it doesn't get through, it will be sent
3 again.

4 And so there will be a number of tries to send
5 the four packets across. And if an acknowledgement is
6 never received by the transmitter but the number of
7 tries hits the retry limit, then the transmitter will
8 give up on those four and go to the next four.

9 Q. And, again, was there any deadlock problem in
10 this approach?

11 A. There's no deadlock problem.

12 Q. All right.

13 A. There's also -- there's no sliding window in
14 this. There's no shifting window. It's my
15 understanding that the arguments of Ericsson about
16 infringing have to deal with the sliding window feature
17 of 802.11n.

18 Q. Thank you.

19 MS. MORGAN: Can we move to the next
20 slide, please?

21 Q. (By Ms. Morgan) What type of engineering
22 effort would have been required to implement this
23 alternative?

24 A. It's actually less complex, and it's actually
25 part of the standard now, so people do it. So it's low.

1 Q. All right. Are you aware of any products that
2 actually use this approach?

3 A. There are products that have used and probably
4 still use it.

5 Q. And would this alternative affect performance
6 of the system?

7 A. It would not significantly reduce performance.

8 Q. All right.

9 MS. MORGAN: Let's go to the next slide,
10 please.

11 Q. (By Ms. Morgan) Could you explain for us your
12 second non-infringing alternative with respect to the
13 '625/'435 patents, aggregation with BlockAck but without
14 window?

15 A. Right. The -- this scheme is very similar,
16 except it's a little more efficient in the sense that it
17 doesn't send packets across the air that have already
18 been received correctly.

19 So it's -- rather than aggregating MSDUs,
20 which are the ones coming into the MAC, it aggregates
21 MPDUs, which have, for example, sequence numbers
22 attached to them from -- that the header -- the MAC
23 assigns to them.

24 So now the packets have a number associated
25 with them, so when they're sent across the channel -- so

1 in this case, it sends packets 1 to 4 -- when no errors
2 are received, the acknowledgement tells the transmitter
3 1, 2, 3, and 4 is received, and then it goes on.

4 However, if you're back in the scenario where
5 you send the four packets across, and the second packet
6 is received with error, the receiver tells the
7 transmitter with an acknowledgement that I received 1,
8 3, and 4.

9 The transmitter now knows that you're -- that
10 you need -- that you would like to get 2, and it only
11 sends 2. It now knows -- since it knows you have 4, 3,
12 and 1, it only sends you 2.

13 Q. All right. And so in this system, if any
14 sub-blocks are missing, only those sub-blocks are
15 retransmitted?

16 A. That's right. It's kind of a -- it works on
17 this block and tries to narrow it down and hopefully
18 gets everything through, through retries. Again, if --
19 after the number of attempts hits the retry limit, it
20 will give up.

21 This is different than the way lln works,
22 because in lln, it's a little more clever. It would
23 say, okay, you need 2. I'm going to tack in some new
24 information.

25 So in this transmission here that shows the

1 single of 2, it would add in say 5, 6, and 7 to try
2 to -- to send some information. And that's where the
3 shifting of the window occurs, and that's the alleged
4 infringement.

5 Q. All right. And in this example, it's prior
6 art, and there is no window shifting, correct?

7 A. That's right.

8 Q. What type of engineering effort would have
9 been required to implement this approach?

10 A. This is simpler than what's done with the
11 shifting of the window, because it's just a block-based
12 system. You don't have to have that complicated
13 procedure to try to have one window sliding along and
14 another one following it.

15 Q. And would this alternative affect performance?

16 MS. MORGAN: Could we go the next slide,
17 please?

18 A. At most, some marginal amount.

19 Q. (By Ms. Morgan) All right. And for all of the
20 alternatives you've just testified about for the five
21 patents-in-suit, would the user experience be different
22 if the alternatives were implemented?

23 A. Not at all.

24 Q. Okay. Thank you, Dr. Heegard.

25 A. Thank you.

1 MS. MORGAN: Pass the witness.

2 THE COURT: Cross-exam.

3 CROSS-EXAMINATION

4 BY MR. CAMPBELL:

5 Q. Good afternoon, Dr. Heegard.

6 A. Good afternoon.

7 Q. I don't think we've had a chance to meet --

8 met -- meet. My name is John Campbell. I'm one of the

9 attorneys for Ericsson.

10 A. John Campbell?

11 Q. That's correct.

12 A. Okay.

13 Q. Just a few questions for you.

14 On your direct, I didn't hear you provide any

15 evidence of testing any of these non-infringing

16 alternatives, did you?

17 A. No.

18 Q. And I also didn't hear you provide any

19 evidence that the IEEE considered any of these

20 non-infringing alternatives, did you?

21 A. No, I didn't.

22 Q. Now, do you -- you -- you've offered a number

23 of non-infringing alternatives. Do you know if there

24 are any patents related to the non-infringing

25 alternatives?

1 A. I don't know.

2 Q. Okay. You didn't do a search for that?

3 A. No.

4 Q. Okay. Let's talk about the '215.

5 The '215 has a Multi-TID frame variant for
6 power save mode, correct?

7 A. 11n doesn't use that, as far as I know.

8 Q. Its in the standard, correct, sir?

9 A. It's in the 11e standard.

10 Q. It's in the 11n standard as well, correct?

11 A. It's not used.

12 Q. All right. I understand, sir. I'm asking
13 you, is it in the 11n standard?

14 A. I don't think it is, actually.

15 Q. Okay.

16 A. I don't think if you -- if you make a product
17 that does 11n, they don't use that; and so I don't
18 really think it is part of 11n.

19 Q. So we won't find it in the 11n standard if we
20 look at the IEEE 11n standard?

21 A. I think it came from the 11e, and they wanted
22 that particular variant, and so they used the text from
23 11e.

24 Q. Maybe I'm not being very clear with my
25 questions.

1 If we look at the 11n standard, the
2 document --

3 A. Okay.

4 Q. -- are we going to find a Multi-TID power save
5 mode variant?

6 A. Well, the way the standard was written, those
7 two numbers are sent. So it should be described in 11n.

8 Q. So it is in there; is that correct, sir?

9 A. The two bits that are used, the particular
10 combination is in the standard, yes.

11 Q. Okay. And you understand that some members of
12 the IEEE wanted to make that mandatory, correct, sir?

13 A. Wanted to make what mandatory?

14 Q. The Multi-TID variant or the power save mode.

15 A. I don't know.

16 Q. You talked to Mr. McFarland, correct, sir?

17 A. Okay.

18 Q. You have, right, sir?

19 A. Yeah.

20 Q. Okay. You understand he's testified that some
21 members wanted to make that mandatory?

22 A. I don't recall that.

23 Q. Okay.

24 MR. CAMPBELL: Let's bring up
25 Mr. McFarland depo at Page 38, Lines 10 to 17.

1 Q. You said you had talked to Mr. McFarland,
2 correct, sir?

3 A. I did talk to him, yeah.

4 Q. Okay.

5 QUESTION: If you look here, you can see
6 the question is: So there was a movement to make the
7 PSMP and the Multi-TID BlockAck mandatory?

8 ANSWER: Yes. There were definitely
9 people who wished that it were mandatory.

10 QUESTION: And across how many meetings
11 do you think this was discussed?

12 ANSWER: A fair number. This was, you
13 know, three, four.

14 Q. (By Mr. Campbell) Did I read that right?

15 A. It looks right.

16 Q. Okay. Now, 802.11e used the basic BlockAck,
17 correct, sir?

18 A. 802.11e, I think, defined the different types
19 of block -- block acknowledgements.

20 Q. Okay. The device compliant with 802.11e,
21 would it use basic BlockAck or the compressed?

22 A. Basic BlockAck is when you're doing
23 aggregation with fragmentation; and when you're doing
24 aggregation with fragmentation, you need to use the
25 basic BlockAck. So yes.

1 Q. So the answer is yes?

2 A. 802.11e.

3 Q. Now, is it important that the IEEE, for new
4 versions of the standard, to provide backwards
5 compatibility?

6 A. Of course.

7 Q. Okay. Let's talk about the '223 patent.

8 Would you agree that Intel's chips are
9 probably the best in the industry?

10 A. I have no opinion on that.

11 Q. You don't have an opinion on that?

12 A. No.

13 Q. Do you think Intel's chips are regarded as the
14 best in the industry?

15 A. I have no idea.

16 Q. Okay. Does Intel command a higher price than
17 other chip makers in the industry?

18 A. I have no idea.

19 Q. All right. Now, Intel uses both a retry
20 counter and a -- and a timer, correct, sir?

21 A. That's my understanding.

22 Q. Okay. Now, could Intel, if they removed the
23 timer, still maintain interoperability?

24 A. You have to transmit the timer, if the
25 question is whether you use it at the receiver, is my

1 understanding. I have not written a report on
2 non-infringement of the '223.

3 Q. You didn't just testify here as to a
4 non-infringing alternative for the '223?

5 A. I simply stated a fact, that it -- that there
6 are -- four of the five chips that have been discussed
7 in this group, four of the five have been admitted by
8 Dr. Nettles as not infringing the patent.

9 That's all I said. I didn't have an opinion
10 about infringement or anything else. I simply stated
11 that only Intel is being accused, and the four other
12 vendors are the -- the other side has admitted they do
13 not infringe, and that's all I -- that's all that slide
14 says.

15 Q. Okay. So just to be clear, you don't have an
16 opinion on a non-infringing alternative for the '223
17 patent; is that correct, sir?

18 A. I think you could play --

19 THE REPORTER: I'm sorry. I'm sorry.
20 Could you --

21 THE COURT: You're getting a little too
22 close to the microphone.

23 THE WITNESS: Okay.

24 THE COURT: If you'll push it back --

25 THE WITNESS: I'm sorry.

1 THE COURT: -- and try to stay about that
2 far away from it (indicating).

3 THE WITNESS: I'll try.

4 Q. (By Mr. Campbell) Let me -- let me ask my
5 question again just to get us back on track.

6 Sir, yes or no, do you have a non-infringing
7 alternative -- do you have an opinion on a
8 non-infringing alternative for the '223 patent?

9 A. If I had a Ralink chip, that's not infringing.

10 Q. How does buying a Ralink chip make the Intel
11 chip non-infringing?

12 A. The question is, are there non-infringing
13 alternatives? Those chips are non-infringing. They're
14 alternatives that are available now.

15 Q. Okay. Do you --

16 A. So you could -- that's the point.

17 Q. Sir, do you have an opinion about the Intel
18 chip, a non-infringing alternative for the Intel chip?

19 A. That's not what I'm --

20 Q. The answer is no?

21 A. I don't have an opinion.

22 Q. You don't have an opinion. The answer is no.

23 A. (No response.)

24 Q. You don't have an opinion; is that correct,
25 sir?

1 A. There are non-infringing alternatives because
2 four of the five chips don't infringe.

3 Q. Sir, do you have an opinion as to a
4 non-infringing alternative for the Intel chip?

5 A. Intel could do what the other vendors do.

6 Q. Which is what?

7 A. It's a non-infringing alternative.

8 Q. Do they use the timer?

9 A. They don't use the timer.

10 Q. Okay. So could Intel remove the timer and
11 still be interoperable?

12 A. Sure.

13 Q. They would still get Wi-Fi certification?

14 A. Sure.

15 Q. Thank you, sir.

16 Okay. On the '568, your non-infringing
17 alternative is still identifying traffic priority, just
18 in a different way; is that correct, sir?

19 A. My understanding of what -- what Ericsson says
20 is infringing is when you send the traffic priority,
21 which they're identifying as the type identify -- the
22 TID as serving the role of the claim. It's the priority
23 number. That's what I understand the -- Ericsson's
24 argument is, the -- can we look at the slide? It's
25 like --

1 Q. So --

2 A. -- data type identifier or whatever it is in
3 the claim.

4 Q. So I don't have a lot of time. Could I get
5 you to answer my question?

6 A. Sure.

7 Q. Okay. That would be great.

8 My question is: Your non-infringing
9 alternative still identifies traffic priority just in a
10 different way, correct, sir?

11 A. The traffic priority -- to infringe, you have
12 to send in that MAC header something that tells you
13 about the nature of the data.

14 And if you don't send the thing that's being
15 accused, if the -- if the information that Ericsson says
16 is providing that information is not sent, you're not
17 infringing.

18 Q. Sir, let's try a yes or no.

19 Your non-infringing alternative is still
20 identifying traffic priority, just in a different way.

21 A. No.

22 Q. No?

23 A. No.

24 Q. You're not identifying traffic priority?

25 A. I'm not sending an identification of the

1 traffic priority.

2 Q. That's not my question, sir. Are you
3 identifying traffic priority?

4 A. There is traffic priority.

5 Q. Thank you, sir.

6 And you need to identify that traffic priority
7 because identifying traffic priority has value, correct,
8 sir?

9 A. At the transmitter.

10 Q. The answer is yes?

11 A. At the transmitter.

12 Q. Yes?

13 A. It has no value at the receiver, knowing that.

14 Q. Okay. The answer is yes, at the transmitter?

15 A. It's useful at the transmitter.

16 Q. There's no value, in your opinion, to sending
17 the priority value to the receiver?

18 A. That's right.

19 Q. If I'm working in a local area network --

20 A. Okay.

21 Q. -- does the receiver use the priority value?

22 A. Are you talking about the priority value that
23 comes in the Ethernet packet, or are you talking about
24 the priority value that's computed at the transmitter to
25 determine which queue you're in?

1 Those are two different priority values. The
2 value in the packet is still going to be sent, but --
3 because it's in the payload.

4 But if you're talking about the priority data
5 that's used in 802.11 to determine which queue it's in,
6 you don't need to send it, because it has no use further
7 down the chain.

8 Q. The receiver would not use that in a local
9 area network?

10 A. No.

11 Q. Now, for the '625 and '435, the
12 Alternative 1 --

13 A. Okay.

14 Q. -- you only acknowledge if the -- you only
15 send an acknowledgement if the entire block is error
16 free; is that correct?

17 A. That's right.

18 Q. And otherwise, you need to -- the transmitter
19 will need to resend the entire block, correct?

20 A. Right.

21 Q. Okay. So if -- the transmitter can't just
22 send a lost packet; it's got to resend the entire block,
23 correct?

24 A. It sends the entire block.

25 Q. Okay. So there is some efficiency lost there

1 in needing to send the entire block if only another
2 packet is needed, correct, sir?

3 A. Right, there is.

4 Q. Okay. And have you done any testing to
5 determine how much efficiency is lost?

6 A. I haven't, but it's very small.

7 Q. You haven't done any testing to determine the
8 amount, have you?

9 A. I couldn't give you an exact figure, but if
10 you send a thousand packets and one in a thousand you
11 have a problem that you send some re -- packet -- some
12 parts of it again, it doesn't really affect the
13 through-put because you got 999 packets through.

14 So, it's only when you're in the error
15 condition that it's -- there's a slight inefficiency.
16 But if you're having a lot of errors, then you have
17 another problem and so you would back off.

18 So the reality of it is, in most transmission,
19 there's no error; so, there's no -- it's perfectly
20 efficient. And it's only a very small fraction of the
21 time would you have a slight inefficiency.

22 Q. Let me ask my question again. You haven't
23 done any testing to test the efficiency loss, have you?

24 A. I haven't tested it, no.

25 Q. Okay. Now, in Slide 15, you admit that

1 alternative 2 has some performance degradation, correct,
2 sir?

3 A. No, I don't. I said marginal.

4 Q. Okay. Marginal is not some performance
5 degradation?

6 A. Marginal is insignificant.

7 Q. Have you done any testing to measure the
8 marginal system performance degradation, sir?

9 A. No.

10 Q. Thank you, sir.

11 MR. CAMPBELL: Pass the witness.

12 THE COURT: All right. Redirect.

13 REDIRECT EXAMINATION

14 BY MS. MORGAN:

15 Q. Dr. Heegard, I believe you testified that --
16 in cross-examination that the alternatives you
17 identified were not considered by the IEEE.

18 I think you may have been mistaken because
19 wasn't the first approach you identified for the '435,
20 '625 patents, isn't that part of the standard today?

21 A. That's true. I probably shouldn't have said
22 blanket.

23 Q. Okay. And counsel asked you a number of
24 questions about whether you tested these alternatives?

25 A. Right.

1 Q. Did you feel it was necessary to test these
2 alternatives?

3 A. No.

4 Q. Why not?

5 A. Because they're all pretty minor tweaks and
6 they wouldn't really have a significant effect on any of
7 the things. So, if whether you send two bits or not, or
8 whether you acknowledge packets slightly differently,
9 doesn't really affect the user experience in any
10 significant way.

11 Q. Thank you.

12 THE COURT: All right. Any further
13 questions?

14 MR. CAMPBELL: No, Your Honor.

15 THE COURT: All right. You may step
16 down.

17 Who will be your next witness?

18 MR. ALPER: Your Honor, Defendants call
19 Dr. Greg Leonard.

20 THE COURT: All right. Dr. Leonard.

21 Let me just, while he's coming up, advise
22 the parties the jury had asked the Court Security
23 Officer if they could quit at 4:00 today, and... I'll
24 write them note.

25 COURTROOM DEPUTY: Your Honor, may I go

1 ahead and swear in the witness?

2 THE COURT: Yes, you may.

3 (Witness sworn.)

4 THE COURT: All right. I'm going to send
5 a note in to the jury that simply says: You may work at
6 your desired schedule. You may quit at 4:00 p.m. or
7 keep working as late as you wish.

8 Any objection to that note?

9 MR. STEVENSON: No objection.

10 MR. VAN NEST: No, Your Honor.

11 THE COURT: All right. Thank you.

12 Oh, let me add one more thing. I'm
13 adding another sentence: Please let me know your plans.

14 All right. You may proceed, Counsel.

15 MR. MITCHELL: Thank you, Your Honor.

16 GREGORY LEONARD, Ph.D., DEFENDANTS' WITNESS, SWORN

17 DIRECT EXAMINATION

18 BY MR. MITCHELL:

19 Q. Please introduce yourself to the Court.

20 A. My name is Gregory Leonard.

21 Q. And, Dr. Leonard, did you prepare any slides
22 to help walk the Court through your background and
23 opinions today?

24 A. I did.

25 MR. MITCHELL: Let's pull up slide 2,

1 please.

2 Q. (By Mr. Mitchell) I'd like to briefly review
3 your qualifications. What do you do for a living?

4 A. I'm an economist and a partner at an economic
5 consulting firm called Edgeworth Economics.

6 Q. And can you describe for the Court your formal
7 education?

8 A. Yes. I received a Bachelor of Science degree
9 in applied math and economics from Brown University and
10 a Ph.D. in economics from MIT?

11 Q. Any teaching experience?

12 A. Yes. I was an assistant professor at Columbia
13 University in the economics department.

14 Q. And have you done any publishing, particularly
15 articles on economics?

16 A. Yes. Over the course of my career, I have
17 published probably about 60 journal articles, book
18 chapters, that kind of thing.

19 Q. And have you ever been cited?

20 A. My work on patent damages in particular has
21 been cited both by the Federal Trade Commission, in a
22 recent report it did on patent damages in other patent
23 litigation issues, and by the Federal Circuit in its
24 Uniloc opinion.

25 Q. And what was your assignment in this case,

1 Dr. Leonard?

2 A. My assignment was to analyze the value of
3 Ericsson's asserted patents, particularly in light of
4 its RAND commitments.

5 Q. And how do you go about doing that?

6 A. Well, economists are widely agreed that the
7 meaning of RAND, or at least a reasonable part of RAND,
8 is that you should look at a royalty or value in terms
9 of the -- the -- what the patented features provide over
10 alternatives that might have been available at the time
11 the standard was set.

12 Q. Before we jump into your opinions, can you
13 briefly describe what information you considered or
14 relied upon in formulating your opinion?

15 A. Yes. I reviewed documents produced by the
16 parties in the case, deposition transcripts, the reports
17 of the technical experts. I also talked to Dr. Shoemake
18 and Heegard, and I also talked to employees of Qualcomm
19 Atheros.

20 Q. And on the question of the value of Ericsson's
21 patents, what is your opinion?

22 A. My opinion is that it's quite low.

23 Q. And can you elaborate a little further for us
24 in terms of, you know, how you got to that opinion?

25 A. Yes. As we've just heard from Dr. Heegard,

1 there were very good non-infringing alternatives that
2 the standard could have used instead of the Ericsson
3 technologies, and given that, then the value of the
4 Ericsson technologies is low.

5 That's the definition of -- you know, that's
6 how value is created. You have to provide something
7 above the non-infringing alternatives, and in this case,
8 that's not the case.

9 Q. And I'd like to turn now to the issue of
10 patent hold-up. And can you describe that for the Court
11 a little bit about that phenomenon?

12 MR. MITCHELL: And we can go ahead and
13 bring up Slide 3.

14 A. Sure. So an important part of RAND and the
15 whole idea of a RAND commitment that standard setting
16 organizations ask their participants to make is to avoid
17 what's called patent hold-up. And so to explain that,
18 I've created this exhibit here.

19 And so the idea is, again, when this industry
20 is a standard setting organization is -- is determining
21 what the standard should look like. There are a bunch
22 of technical problems that need to be solved, and for
23 each one of those problems, there's often more than one
24 alternative technology that could be used to solve the
25 problem. And, of course, when you make that choice and

1 then put it together, you have the standard.

2 So, in the picture here I've illustrated that
3 the industry is -- is sitting at a particular fork in
4 the road. There are two different technologies that it
5 could adopt to solve a particular problem that, you
6 know, is part of what needs to be addressed by the
7 standard.

8 There's a right fork in the road which would
9 be to use a non-infringing alternative. There's a left
10 fork in the road which would be to use Ericsson's
11 technology. And the way I've drawn this it was -- it
12 was deliberate. It says that whichever fork in the road
13 you take, the length of the road you'd have to drive is
14 the same. So that is to say the two technological
15 choices are basically for all intents and purposes
16 equivalent.

17 And in that kind of situation, then, if you
18 think about Ericsson asking the industry to pay a toll
19 for it's -- the use of its technology, that is to say a
20 royalty, when the industry has the choice of taking that
21 right-hand fork instead of paying Ericsson a toll, then
22 what's going to happen is Ericsson's ability to charge a
23 high royalty is going to be severely constrained,
24 because the industry is going to say, you know, we're
25 not going to pay you anything, Ericsson, because we can

1 just take the right-hand fork in the road and be on our
2 way and without any hidden performance at all.

3 Q. (By Mr. Mitchell) And then so that was the
4 before hold-up, right?

5 A. Right. So this is, again, when the industry
6 is setting the standard, it's making the choices about
7 what technologies to include, and it has complete
8 flexibility to choose a non-infringing alternative,
9 which in this case, again, as I've drawn it, is just as
10 good as the Ericsson technology.

11 Q. And then let's turn to the next slide and
12 tell --

13 THE COURT: Counsel, let me interrupt you
14 for a moment. I have jury Note No. 2 from the jury that
15 said -- says: We are not close to decisions. Would
16 like to return tomorrow morning. Signed by the
17 Foreperson.

18 And I propose to write back the following
19 response -- response to jury note No. 2:

20 Very good. You are excused until 9:00
21 a.m. in the morning. Please remember my instructions
22 while you are in recess. Once all eight of you are
23 present in the morning, you may continue your
24 deliberations. Have a good evening.

25 Is there any objection to that response?

1 MR. STEVENSON: No objection.

2 MR. VAN NEST: No, Your Honor.

3 MR. STEVENSON: All right. Thank you.

4 All right. You may proceed.

5 Q. (By Mr. Mitchell) All right. Dr. Leonard, I
6 think you were just going to introduce us to this next
7 slide here. Why don't you go ahead and -- and walk us
8 through what this slide illustrates?

9 A. So this illustrates the hold-up problem, and
10 that can occur once the industry has already chosen
11 which technology it's to incorporate into the standard.

12 It's already set the standard. It's already
13 designed products that are compliant with the standard
14 and started selling them in the marketplace. And that's
15 represented on this diagram by the fact that the
16 industry has already chosen the left fork, which was
17 covered by Ericsson's technology, and is driven the full
18 length of the road.

19 And it's only then that Ericsson stops the
20 industry and says at this point we want to talk to you
21 about royalties.

22 Now the difficulty in the comparison to the
23 previous slide is at this point the industry has already
24 committed down the left-hand fork in the road, even
25 though it was no better than the right-hand fork.

1 At this point to reverse that decision and go
2 back and take the right fork would mean driving back all
3 the way to the original fork in the road and then taking
4 the right-hand path.

5 That would take time, that would cost money,
6 you would have to redesign all your products. You
7 actually have an installed base of products out there
8 who would be left high and dry. So it's very, very
9 unattractive.

10 So at that point in time, Ericsson, in
11 principle, could ask for a fairly high royalty, but that
12 royalty would not be reflecting the true economic value
13 of their technology but instead the fact that the
14 industry was locked in and could be held up.

15 Q. Okay. Thank you.

16 Now back to the question of the valuation of
17 the Ericsson's patents. Did you determine an actual
18 value that would be paid by Defendants for a license
19 under Ericsson's patents?

20 A. I did under, again, RAND terms.

21 So, I'm excising out hold-up and I'm focusing
22 just on the economic value of Ericsson patents relative
23 to the non-infringing alternatives that could have been
24 available or were available at the time and could have
25 been adopted into the standard.

1 Q. And let's turn to the next slide. And can you
2 go ahead and summarize your opinion?

3 A. Yes. So, after talking to Dr. Heegard and
4 understanding what the non-infringing alternatives were
5 and understanding that there really wouldn't be any
6 affect on performance to speak of, it's really then just
7 a question of cost.

8 Would the -- the Ericsson technologies have
9 been less costly to implement than the non-infringing
10 alternatives?

11 And so what I did is I went and talked to the
12 Qualcomm Atheros engineers about how much it would have
13 cost to implement the non-infringing alternatives, and
14 based on the information I received from them, I
15 determined that the cost would have been about \$190,000
16 per chip supplier; and that we have five chip suppliers
17 in the case.

18 So if you multiply the 190,000 by five, you
19 get about \$950,000, so that's the total amount of cost
20 that would be involved in implementing the
21 non-infringing alternatives, and that really serves in
22 an upper bound on what the appropriate RAND royalty
23 would be for Ericsson's asserted patents.

24 Q. And we'll jump into the specific patent
25 alternatives in a moment, but can you articulate the

1 reasoning for your opinion on that maximum value of no
2 more than 950,000 or so?

3 MR. MITCHELL: And we can turn to
4 Slide 6.

5 A. Yes. Again, it really comes back to the
6 non-infringing alternatives. This is what determines
7 value.

8 Something has value only if it offers a
9 benefit above and beyond whatever the alternative is;
10 and in this case, as we just heard from Dr. Heegard,
11 there were several alternatives to each of the features
12 that have been accused by Ericsson.

13 Each alternative could have been adopted with,
14 essentially, no loss of performance to speak of.
15 And we also heard from him, he mentioned the cost of
16 implementing the alternatives would have been minimal.

17 So for all those reasons, together the value
18 of Ericsson's patents have to be low when looked at from
19 a RAND perspective.

20 Q. (By Mr. Mitchell) And as you know, we just
21 heard from Dr. Heegard regarding the details. But can
22 you briefly walk us through the non-infringing
23 alternatives and what your opinions are based?

24 MR. MITCHELL: And we can turn to the
25 next slide.

1 A. Yes. So just very quickly because we just did
2 hear it.

3 But the -- for the '568 patent, my
4 understanding is you would just omit any priority code
5 in the TID subfield.

6 For the '215 patent, the idea would be that
7 you would remove the subfield that really isn't used for
8 anything and you would send only compressed BlockAck,
9 which is what the industry actually already does anyway.

10 For the '223 patent, again, it's just the
11 Intel chipsets that are accused here. So that means
12 whatever Broadcom, Atheros, and the other suppliers are
13 doing must not be infringing, so either Intel could have
14 adopted that or the end product manufacturer such as
15 Acer that use Intel chips could easily just have chosen
16 Broadcom and Atheros chips instead.

17 And lastly, the '435 and '625 patents, which I
18 understand can be treated together for this -- for this
19 issue, the non-infringing alternative would be to use --
20 still using aggregation, still use block acknowledgement
21 but just simply don't have the windows shifting.

22 Q. And the performance implications that -- that
23 you noted?

24 A. Yes. Again, for the first three, I think the
25 answer's no performance implications whatsoever. For

1 the last one, as we heard, it's something that's so
2 small that it's not even noticeable to a -- to a user
3 and, therefore, completely irrelevant from the point of
4 view of, you know, would the standard be successful,
5 would it be adopted.

6 And, you know, that makes a lot of sense, too,
7 when you consider the fact that the reason 802.11n, for
8 instance, was a lot faster in terms of data through-put
9 really had to do with, as Dr. Heegard just told us,
10 things that had absolutely nothing to do -- you know, no
11 one disagrees with this -- with the physical layer and
12 other things that have nothing to do with Ericsson's
13 patents.

14 Q. I think we'll -- we'll turn now to the
15 numbers, but before we get to the actual numbers, can
16 you explain the cost metrics you used to arrive at your
17 opinions and why; and in particular, were your opinions
18 based on the incremental cost of implementing the
19 alternatives or the absolute cost?

20 A. Yes. So the right measure here would be,
21 given that there are no performance effects to worry
22 about, the right measure would be to use any incremental
23 costs in implementing the non-infringing alternatives
24 relative to what it would have cost to implement the
25 Ericsson technologies.

1 So that is to say if the non-infringing
2 alternatives would have cost a little bit more, then
3 somebody might have been willing to pay a royalty
4 reflecting that cost difference to have access to the
5 Ericsson technology because it would have saved money on
6 the implementation side.

7 So that's the right measure, the incremental
8 cost one.

9 But for the purposes of my analysis, it's a
10 lot easier to figure out the absolute costs. Simply,
11 how much would it have cost in an absolute sense to
12 implement the non-infringing alternatives? And I used
13 that as a conservative measure of the incremental cost,
14 and the incremental costs necessarily must be less. And
15 so I used that as -- as my measure. In that sense, it's
16 quite conservative.

17 Q. And so let's now turn to those absolute costs
18 that -- that you identified. Let's turn to Slide 8.

19 And can you explain how you tallied up the
20 absolute costs of replacing the accused technologies
21 with the alternatives?

22 A. Yes. So the first step was I talked to
23 William McFarland from Atheros who's, I believe, the
24 vice-president of technology, and James Cho who's an
25 engineer at Qualcomm Atheros, and I had talked to them

1 about the amount of time it would take and number of
2 employees to implement the non-infringing alternatives
3 both on the hardware side and the software side.

4 As it turns out there's some work that needs
5 to be done in both areas. And what I determined is that
6 at the absolute outside, it would have taken four months
7 on each side. So four months of one person working on
8 the hardware, four months of one person working on the
9 software to implement the non-infringing alternatives.

10 And then I took those four months and
11 multiplied them by an appropriately prorated salary for
12 an engineer. And that number I got both from talking to
13 Mr. Cho but then also checking it against some
14 government bureau of labor statistics.

15 And then added on top of that some benefit
16 costs because, of course, in addition to salary, you
17 have to pay your engineers' benefits. Again, the data
18 for that came from some -- some government public
19 sources.

20 And then added up the money. And it ended and
21 up being \$189,934 and that's, again, for one chip
22 supplier to implement the non-infringing alternatives.

23 Since we have five chip suppliers in the case,
24 I multiplied the -- the per-chip supplier number by five
25 and obtained the total number of \$949,668. And this

1 would represent again the appropriate RAND royalty
2 payment that would cover all the Defendants in the case,
3 and it would cover really all time. It's -- it's a
4 one-time cost that would cover both past, as we're
5 sitting here today, but also future.

6 Q. And now how does your valuation for these
7 patents compare to Ericsson's demanded royalties and the
8 opinions Mr. Bone offered?

9 A. Well, it's a lot lower than the number that
10 Mr. Bone put forward, and it's a lot lower than I
11 understand Ericsson has, for instance, you know,
12 attempted to offer to Defendants.

13 Q. And what's your understanding on -- of what
14 that is?

15 A. 50 cents a unit, or in that range.

16 MR. MITCHELL: Now we can go ahead and
17 put up slide 9.

18 Q. (By Mr. Mitchell) If we choose the midpoint of
19 the damages Ericsson is seeking here and what it claims
20 is -- is compliant with RAND, \$34 million, why does this
21 slide illustrate why yours is right and Ericsson's is
22 wrong?

23 A. Well, again thinking back to what RAND
24 means -- RAND means, when the industry had a choice
25 about what technologies to include in the standard, when

1 it was sitting at the fork in the road, it's going to
2 think about which fork to go down; and that's the right
3 place to analyze how much could Ericsson have asked for
4 in terms of a royalty and have the industry still be
5 willing to take the left-hand fork in the road.

6 So since the right-hand fork would have cost
7 the industry about a million dollars, the most Ericsson
8 could have gotten is a million dollars. Otherwise, the
9 industry would have said forget it, we're not going to
10 use your technology, Ericsson. We're going to go on the
11 right-hand fork in the road and only pay a million
12 dollars.

13 So the idea that somehow the industry would
14 ignore their -- you know, what was in their best
15 interest and instead take the left-hand fork and pay \$34
16 million, it just doesn't make economic sense, and in the
17 context of RAND, you know, particularly as I've
18 described here.

19 Q. And you reviewed Mr. Bone's reports and
20 opinions, right?

21 A. I did.

22 Q. Okay. And did you identify any problems --
23 and I want to be brief, but -- with his opinions?

24 MR. MITCHELL: And we can turn up Slide
25 11.

1 A. Well, in reviewing his analysis, I looked for
2 him to say what are the benefits of Ericsson's
3 technologies over the non-infringing alternatives that
4 could have been used, and I saw absolutely nothing on
5 that subject. It's an absolutely crucial subject
6 because unless there are tremendous benefits, you can't
7 get millions of dollars in royalties, certainly in the
8 RAND context.

9 So, the fact that there was no analysis of the
10 actual value of the patents-in-suit I think is the main
11 problem.

12 And then the second problem is what Mr. Bone
13 did look at was a set of license agreements, but those
14 are just really all not comparable or not an appropriate
15 source of information for determining the RAND royalty
16 rate. And there's really two reasons for that.

17 One is that they're subject to the very
18 hold-up that RAND is supposed to excise when we're
19 trying to determine the RAND rate. Because all those
20 license agreements were entered into well after the
21 standard had been set and the industry was locked in.

22 So for that perspective, the licenses are just
23 not a reasonable basis for determining RAND.

24 And, secondly, I think as we heard in numerous
25 ways, those licenses are -- for instance, the HP license

1 is a huge cross-license involving many patents,
2 involving even a purchase of patents by Ericsson from
3 HP.

4 When you have that kind of situation, it's
5 very, very hard to isolate the value out of that big
6 exchange of just the five asserted patents that are at
7 issue. And in that kind of situation, any attempt to do
8 that is very likely to be incorrect. And looking at
9 what Mr. Bone did, I believe he made a number of
10 mistakes.

11 Q. (By Mr. Mitchell) So, Dr. Leonard, what's your
12 bottom-line opinion?

13 MR. MITCHELL: And we can turn to Slide
14 10.

15 A. Well, my bottom-line opinion, again, is if you
16 look at what choices the industry had back when the
17 standard was set and the -- they had very good
18 alternatives to Ericsson's technologies.

19 At the most it would have cost a million
20 dollars more to implement those alternatives instead of
21 Ericsson's technologies.

22 And in that case, there's just simply no way
23 that the industry would have paid a royalty more than
24 about a million dollars; and so that, therefore, is the
25 appropriate RAND rate for this case.

1 Q. Thank you, Dr. Leonard.

2 MR. MITCHELL: Pass the witness.

3 THE COURT: All right. Cross-exam.

4 And let me inquire, Mr. Campbell, how
5 long you would anticipate your cross will take.

6 MR. CAMPBELL: Five to 10 minutes.

7 THE COURT: All right. And let me
8 inquire of Defendants what additional witnesses you
9 have.

10 MR. MITCHELL: Your Honor, we have one
11 additional witness, Dr. -- we'd call Dr. Ray Perryman,
12 and I figure that's about 25 or 30 minutes.

13 THE COURT: All right.

14 And then will Plaintiff have witnesses?

15 MR. CAWLEY: One, Your Honor; be Mr.
16 Brismark again, and I think I can put him on in 10
17 minutes.

18 MR. CAMPBELL: And Dr. Nettles.

19 MR. CAWLEY: Oh, and Dr. Nettles, that's
20 right. And how long will he be?

21 MR. CAMPBELL: Dr. Nettles will probably
22 be 10 minutes and Mr. Bone maybe five.

23 THE COURT: Okay. All right. Okay.

24 Thank you.

25 All right. You may proceed, Counsel.

1 MR. CAMPBELL: Thank you, Your Honor.

2 Can we get his slide? Can you give me

3 Slide 3?

4 CROSS-EXAMINATION

5 BY MR. CAMPBELL:

6 Q. Good afternoon, Dr. Leonard.

7 A. Good afternoon.

8 Q. I want to go back to your Slide 3 here and

9 look at the fork in the road.

10 The bottom fork in the road, do you know

11 there's no patents on those non-infringing alternatives?

12 A. I'm certainly not aware of any patents.

13 Q. That's -- really wasn't my question. Do you

14 know there's no patents on those non-infringing

15 alternatives?

16 A. I think it's very hard to say with absolute
17 certainty unless you have looked at every patent in the
18 world that there's no patents, but I've certainly not
19 heard that there are any patents on those alternatives.

20 Q. All right. Well, let me ask it differently.

21 Did you look to see if there were any patents
22 on those alternative?

23 A. That's certainly something that I discussed
24 with Dr. Heegard when we were talking about this, and --
25 and he wasn't aware of any.

1 Q. Well, you heard Dr. Heegard just testify he
2 didn't look for any, correct?

3 A. Well, I -- but I think he's also a very
4 knowledgeable person in this industry who would be aware
5 of -- of these kind of patents if there were.

6 There were -- a lot of these things we're
7 talking about were prior art or they're things that are
8 done right now. So, if there were some patents, they
9 may have already come out of the woodwork.

10 Q. Okay. So you didn't do a search either; is
11 that correct, sir?

12 A. I did not do a technical search, that's
13 correct.

14 Q. Okay. So you don't know if there would be a
15 toll on the bottom part of that road, do you, sir?

16 A. Well, I can't really say more than I just
17 said, which is I'm certainly not aware that there are
18 any patents.

19 Q. Okay. Now --

20 A. And, by the way, if there were -- and there
21 were people in the standard setting organization, then,
22 of course, they would also be subject to a RAND
23 commitment.

24 Q. Now you're relying on others for their
25 opinions on the qualities of the non-infringing

1 alternatives, correct, sir?

2 A. What do you mean by "quality"?

3 Q. Well, you've got two forks in the road here,
4 and they both end up in the same place. You don't know
5 that this system would end up in the same place in terms
6 of performance or quality, do you, sir?

7 A. Well, I think we do because -- well, first of
8 all, in speaking to Dr. Heegard and his testimony just
9 now, but also just looking -- since a lot of those
10 alternatives are things -- for instance, compressed
11 BlockAck -- that are already done and things seem to be
12 working fine, I think that's a pretty good indication
13 that -- you know, it's a market test. They're working.
14 They're working fine.

15 It's the same thing, for instance, with the --
16 the alternative related to Intel versus the other
17 suppliers. All the other suppliers are quite successful
18 in the marketplace, and so Intel could have done what
19 they did.

20 Q. Sir, you're not a technical expert, correct?

21 A. Those -- those are market outcomes, though.

22 Q. Sir, my question to you is, you're not a
23 technical expert, correct?

24 A. I'm not a technical expert, that's fair.

25 Q. You're not qualified to make technical

1 evaluations of non-infringing alternatives, are you?

2 A. Sure. That's why I talked to Dr. Heegard.

3 Q. Now, you would agree with me, correct, that
4 the 802.11n standard was ratified in September 2009?

5 A. That's correct.

6 Q. Okay. Now, I want to see if you agree with a
7 couple of things that Dr. Perryman said in his report.

8 He said that a draft standard is compiled and
9 may undergo many revisions before being finalized.

10 Do you agree with that?

11 A. I mean, as a general statement, but since I
12 think you have the word "may" in there, it's -- I think
13 that's correct.

14 Q. Okay. He also said that because standards are
15 living documents, that they would be modified or updated
16 after publication.

17 Do you agree with that?

18 A. You know, again, in principle, but I think
19 it's widely agreed that making major changes would be
20 incredibly disruptive.

21 Q. So is that a yes or a no?

22 A. It's a sort of.

23 Q. Sort of. Okay.

24 Well, I'm just not getting yes or no answers
25 to any questions today.

1 Okay. But you agree that -- you understand --
2 or do you understand that NETGEAR was given notice of
3 Ericsson's patents prior to the ratification of the
4 802.11n standard? Are you aware of that?

5 A. Yes, I believe that's correct.

6 Q. Okay. You're aware that Ericsson's entered
7 into licenses with Option, Ascom, and RIM all before
8 ratification of the 802.11n standard, correct, sir?

9 A. Yes. I'll point out that all those licenses,
10 I believe, covered "g" as well, which, of course, the
11 industry was locked into at the point those licenses
12 were signed.

13 Q. I just can't get yes or no answers, can I?
14 The answer was "yes," sir?

15 A. Sure. I'm -- yes.

16 Q. Thank you.

17 Now, you understand that the negotiations with
18 Buffalo started prior to 802.11n being ratified,
19 correct, sir?

20 A. I think that's correct, yes.

21 Q. Now, there's been no evidence that Option,
22 Ascom, RIM, Buffalo, or NETGEAR have complained, or
23 complained at the time, to the IEEE that Ericsson's RAND
24 rate was too high, correct, sir?

25 A. I don't think I've seen anything to that

1 effect.

2 Q. Okay. No evidence that Option, Ascom, RIM,
3 Buffalo, or NETGEAR asked the IEEE to change the
4 standard, correct, sir?

5 A. I don't think I've seen anything along those
6 lines.

7 Q. Okay. Now, I just want to be clear. On the
8 licenses that Ericsson has, is it your opinion that
9 those licenses include the holdup value or have the
10 potential to include holdup value?

11 A. They include holdup value.

12 Q. Okay. And how much of the value is holdup
13 value?

14 A. The vast majority.

15 So if you take my lump-sum RAND royalty rate
16 and turn it into a cents per unit, it's, you know,
17 something on the order of 1 to 2 cents at most.

18 So if you take Mr. Bone's royalty rate of
19 50 cents and subtract the 1 to 2 cents, the remainder of
20 that is holdup value.

21 Q. Well, let me be clear. I'm not asking about
22 Mr. Bone's rate; I'm asking about the existing licenses.

23 You understand there's an existing license
24 with Hewlett-Packard, RIM, Buffalo, Option, Ascom,
25 Sonim. You understand that, correct, sir?

1 A. Yes.

2 Q. Do those existing licenses include holdup
3 value or the potential for holdup value?

4 A. They -- the ones that I've seen that Mr. Bone
5 analyzed and came up with a per-unit royalty, those are
6 all well above 1 to 2 cents, and so that would then
7 include holdup value.

8 Q. Okay. So every -- any value in the effective
9 royalty above 1 to 2 cents, in your opinion, is holdup
10 value; is that correct?

11 A. If it's been properly attributed to the
12 patents-in-suit, yes.

13 Q. Okay. Now, have you seen any evidence or any
14 of these licensees have alleged they've been held up?
15 Yes or no, sir?

16 A. Well, I haven't seen -- well, I don't know.
17 I'm not sure about RIM, but -- who were the others?

18 Q. Hewlett-Packard, RIM twice, Buffalo, Ascom,
19 Option, Sonim. Have you seen any evidence that any of
20 those licensees allege they were held up?

21 A. I haven't -- I don't think I've seen something
22 like that one way or the other.

23 Q. Okay. You relied on Mr. Cho for a lot of your
24 analysis, correct, sir?

25 A. Really I'd say it for the -- the cost-related

1 information.

2 Q. Okay. And will we hear from Mr. Cho today?

3 A. I don't think so, but I'm not in charge of the
4 witness list.

5 Q. Okay.

6 MR. CAMPBELL: Your Honor, I have about
7 three or four questions that, unfortunately, relate to
8 one of the license agreements, and I need to seal the
9 courtroom, please.

10 THE COURT: All right. The courtroom
11 will be sealed. If you're not covered by the protective
12 order that has been entered in this case or a party to
13 the protective order, you will need to leave the
14 courtroom at this time and remain outside until we
15 unseal the courtroom.

16 So please excuse yourself if you are not
17 a party to or covered by the protective order in this
18 case. If there's any doubt in your mind, please leave
19 the courtroom.

20 (Pause in proceedings.)

21 (Courtroom sealed.)

22 (This is Sealed Portion No. 9 and
23 filed under separate cover.)

24 (Courtroom unsealed.)

25 (Pause in proceedings.)

1 MR. MITCHELL: Your Honor, may
2 Dr. Leonard be excused?

3 THE COURT: Excuse me?

4 MR. MITCHELL: May Dr. Leonard be
5 excused?

6 THE COURT: Yes, he may.

7 You may proceed.

8 MR. ALPER: Thank you, Your Honor.

9 RAY PERRYMAN, Ph.D., DEFENDANTS' WITNESS,

10 PREVIOUSLY SWORN

11 DIRECT EXAMINATION

12 BY MR. ALPER:

13 Q. Good afternoon, Dr. Perryman.

14 A. Good afternoon.

15 Q. Thank you for joining us. We --

16 MR. ALPER: If we could display Slide No.
17 2, please, we'll get started.

18 Q. (By Mr. Alper) We heard a bit earlier in the
19 case and from Dr. Leonard about the issues of patent
20 holdup and lock-in in connection with standard-setting
21 organizations and licensing of standard essential
22 patents.

23 How does that relate to RAND licensing from
24 your perspective, Dr. Perryman?

25 A. Well, the whole idea behind RAND licensing is

1 to create interoperability where no matter what brand
2 you're on, where your location is, you can use the
3 various products.

4 In the case in particular of Wi-Fi, to do it
5 at a very low cost, and that's done through the whole
6 process of letters of assurance, people agreeing to
7 license at reasonable rates.

8 And so when you have someone come along later
9 and say, well, I want substantially more money than
10 what's regarded as reasonable, that sort of really
11 undermines the entire process.

12 Q. And RAND is the answer to that problem?

13 A. RAND is the answer, yes, sir. It's what --
14 it's what the standards associations have tried to do to
15 address it.

16 Q. And did you calculate a RAND rate for
17 Ericsson's 802.11 portfolio in this case?

18 A. I did, yes, sir.

19 Q. Now, what are some of our goals that we want
20 to try to achieve when we're calculating a RAND rate in
21 this context?

22 A. Well, we want to properly value the
23 technology, based on its incremental contribution to
24 the -- to the standard and to the products that we made
25 from the standard, and do that in a way that doesn't

1 include the holdup value that was just discussed.

2 We want to go back in time to the point just
3 before this fork in the road and say, at that point in
4 time, what was the technology worth.

5 THE COURT: All right. Counsel, the
6 Court needs to take a recess for about 15 minutes, so
7 we'll be in recess until 10 minutes till 5:00.

8 MR. ALPER: Thank you, Your Honor.

9 COURT SECURITY OFFICER: All rise.

10 (Recess.)

11 (Jury out.)

12 COURT SECURITY OFFICER: All rise.

13 THE COURT: Please be seated.

14 All right, Counsel. You may proceed.

15 MR. ALPER: Thank you very much, Your
16 Honor.

17 Q. (By Mr. Alper) Dr. Perryman, when we left off,
18 we were talking about some of the goals that you had in
19 mind when you were calculating your RAND royalty. Is
20 what -- does one of those goals have to do with putting
21 the parties back in the position they would have been in
22 at the time of standardization?

23 A. Exactly. Yes, sir.

24 Q. And why is that?

25 A. Well, that -- that's the whole idea is you

1 want -- you want people to be properly compensated for
2 the technology and not for any extra value that's
3 obtained just because it's included in the standard.

4 And a way to do that is to determine what it
5 was worth just before the standard was issued.

6 Q. And is that extra value, is that referred to
7 as lock-in value or patent hold-up value?

8 A. It is, yes, sir.

9 Q. And you're contrasting that with the actual
10 value of the technology?

11 A. That's correct, yes, sir.

12 Q. Thank you, sir.

13 Now, yesterday when you testified, you walked
14 through the Georgia-Pacific Factors and did a
15 Georgia-Pacific Analysis?

16 A. Yes, sir, I did.

17 Q. Now, how does the Georgia-Pacific Analysis,
18 from an economist's perspective, relate to the RAND
19 analysis?

20 A. Well, they have a lot of similarities, but
21 there's also some pretty important differences. There's
22 some parts of Georgia-Pacific that are just different in
23 RAND.

24 Q. Okay. Well, I'm going to present a couple of
25 the factors to you and ask you from an economics

1 perspective how those relate to RAND so --

2 A. Yes, sir.

3 Q. So, for instance, Factor 4 concerns the
4 licensor's established policy and marketing program to
5 maintain its patent monopoly. Are you familiar with
6 that factor?

7 A. Yes, sir, I am.

8 Q. Now, is that factor applicable in the RAND
9 context?

10 A. It's really not. Once -- once you've given a
11 letter of assurance and you're participating in a
12 standard, you've given up the -- the patent monopoly, so
13 to speak. You've agreed to license it on reasonable and
14 non-discriminatory terms to anyone that wants a license.

15 Q. Thank you.

16 Now let's take a look at Factor 5. Factor 5
17 involves the commercial relationship between the
18 licensor and the licensee such as whether they are
19 competitors.

20 Now, how does that factor relate to the RAND
21 analysis?

22 A. Well, in that factor, typically if you have a
23 situation where -- where you have competitors licensing
24 one another, you may even have a lost profits type
25 analysis because it's cannibalizing each other's sales

1 and that sort of thing.

2 In -- in a RAND analysis, basically you've
3 agreed to license everyone no matter what their station;
4 competitor, supplier, whatever the case may be. You
5 have agreed to license anyone who wants a license on
6 fair and reasonable terms.

7 Q. So Factor 5 would not be applicable in the
8 RAND context?

9 A. That's correct, yes, sir.

10 Q. Okay. And let's take a look at Factor 1.
11 Factor 1 deals with the royalties received by the patent
12 holder or the licensor. Are you familiar with that
13 factor?

14 A. Yes, sir, I am.

15 Q. And you talked about that yesterday in your
16 testimony?

17 A. I did, yes, sir.

18 Q. Okay. Now, is that factor relevant in the
19 RAND context, and if so, how is it relevant?

20 A. Well, it can be relevant. If you have
21 licenses that where both parties clearly knew there was
22 a RAND agreement in place and you were negotiating under
23 RAND terms, then under that situation they could be
24 informative. If -- if you're not in that situation,
25 they're not informative.

1 Q. So when you're looking at Factor 1 or you're
2 looking at licenses, you're looking for a clear
3 understanding of the parties that a RAND obligation
4 existed when they're entering into negotiations?

5 A. That's correct, yes, sir.

6 Q. Thank you very much.

7 Now, we heard Mr. Bone testify yesterday in
8 connection with his damages analysis. Now, did he
9 perform an independent RAND analysis?

10 A. He did not, no, sir.

11 Q. Okay. And I think we heard testimony to that
12 effect yesterday?

13 A. Yes, sir.

14 Q. All right. Now, did he rely on the
15 Georgia-Pacific Factors?

16 A. He did, yes, sir.

17 Q. And was that an unmodified, traditional
18 Georgia-Pacific Analysis?

19 A. Yes, sir, it was.

20 Q. Now, as a result of that -- of that, can we
21 rely in any way on Mr. Bone's analysis when it comes to
22 determining a RAND rate?

23 A. No, sir. He used some licenses that have
24 rates like a dollar and \$1.20, at least by his
25 calculations, which is well above even what was

1 published to be the RAND rate here.

2 Q. Now, based on your review of Mr. Bone's report
3 and his testimony in court and his deposition, have you
4 seen any evidence that Mr. Bone attempted to establish
5 that the parties to the licenses that he's relying on
6 clearly understood their RAND obligations when entering
7 into negotiations in executing those licenses?

8 A. No, sir, I have not.

9 Q. Thank you.

10 Let's take a step back and talk about where
11 RAND obligations -- the RAND obligations in this case
12 arise from.

13 Can you tell us where those come from in case?

14 A. Yes, sir. As has been said before, Ericsson
15 entered two letters of assurance, one in 2003, one in
16 2011, that -- essentially the language is very similar,
17 that agreed to license under reasonable rates to an
18 unrestricted number of applicants under reasonable terms
19 and free of any unfair discrimination.

20 Q. Okay. And have you seen -- in your review of
21 the evidence in this case, have you seen any evidence
22 from Ericsson confirming that it -- its belief that it
23 has a contractual obligation as a result of these
24 letters of assurance?

25 A. Yes, sir, I have.

1 Q. If we can go to the next slide, you can tell
2 us about that.

3 A. Yes, sir. This exhibit is an Ericsson
4 document, and it says in it a RAND commitment is a
5 contractual undertaking. And then in deposition
6 testimony, Mr. Brismark was asked:

7 You see where it reads a RAND commitment is a
8 contractual understanding?

9 He said yes.

10 He was asked if he agreed with that.

11 And he also said yes.

12 Q. Thank you very much, sir.

13 Now let's turn back to the calculation of the
14 reasonable RAND royalty in this case. Can you -- can
15 you walk us through your methodology?

16 A. Yes, sir, I can.

17 What I was seeking to do was get down to
18 the -- what is the value of the technology itself. And
19 to do that, you have to apportion the technology based
20 on all the other technology that's out there to
21 determine the appropriate amount to allocate.

22 In doing that, you have to consider the -- the
23 risk of royalty stacking. And so you have to look at
24 proportionality in the process.

25 As we've said before, go back to the time just

1 before that fork in the road when -- when the -- before
2 the standard's adopted and then -- and then from there
3 just to try to perform the calculations appropriately.

4 Q. Thank you very much.

5 Well, I'd like to briefly walk through some of
6 these steps and -- and I believe you did some -- you had
7 some testimony yesterday, so we'll -- we'll try not to
8 duplicate that.

9 First in terms of apportionment, what was the
10 unit that stood -- what is the unit that's to be
11 licensed in this case?

12 A. The unit to be licensed in this case is a
13 Wi-Fi chip.

14 Q. And -- and what evidence did you rely on in
15 coming to that conclusion?

16 A. Well, all the reports, depositions, technical
17 experts I could talk to, every -- testimony I've
18 listened to in court from both sides, everyone has
19 agreed that the technology resides on the chip.

20 Q. Okay. Now, in terms of apportioning the value
21 of the 802.11 and the 802.11n in comparison to all of
22 the technologies on these chips, what -- what pro --
23 what portion did you arrive at?

24 A. Well, I used 35 percent for the proportion
25 that was 802.11n on the chip, and 17.5 percent for

1 802. -- or -- I'm sorry -- for 802.11 in its entirety,
2 35 percent; for 802.11n 17.5 percent.

3 We just heard Mr. Shoemake -- Dr. Shoemake
4 talk about the analysis he went through to help me and
5 walk me through to get to those numbers.

6 Q. And you base those conclusions on Dr.
7 Shoemake's analysis?

8 A. I did, yes, sir.

9 Q. Okay. Thank you.

10 Now let's skip over to the next step in the
11 analysis which you referred to as proportionality. Can
12 you tell us what is a proportionality analysis?

13 A. Well, it's where you try to figure out once
14 you -- once you figured out the base to start from, you
15 need to figure out what percentage of all the technology
16 that's out there rests with the -- the patents that
17 you're talking about.

18 Q. Okay. And -- and how do you do -- go about
19 doing that?

20 A. Well, you -- you try to look for indicia that
21 you can find that will give you an idea. Obviously it's
22 an imperfect process, but you try to get an idea of the
23 percentage that is appropriately allocated. And when I
24 do that type of analysis, I try to make assumptions in
25 favor of -- of in this case the -- Ericsson.

1 Q. And so you're going to -- in order to perform
2 a proportionality analysis, you're going to go out and
3 you're going to try to figure out what's Ericsson's
4 share of the total number of patents out there on
5 802.11?

6 A. Yes, sir, that's correct.

7 Q. Okay. Now, if we go to the next slide, what
8 can happen if we do not perform a proportionality
9 analysis?

10 A. Well, if you don't perform a proportionality
11 analysis very quickly, you can get to a point where
12 the -- where the royalty doesn't make sense in relation
13 to the price of the product.

14 Example here, very simple example. We know
15 there are thousands of -- of pieces of technology in an
16 802.11 chip. We know they sell for, on average, \$2.41.

17 If even 10 people ask for 50 cents, you're at
18 \$5.00; a hundred people ask for 50 cents, you're at
19 \$50.00. So very quickly you get to a point where you've
20 exhausted the entire price of the chip, and ultimately
21 to a point it's not feasible to make the chip anymore.

22 Q. All right. From an economics perspective,
23 what happens if the cost of a royalty is double the
24 price of a chip? For instance, in the example that you
25 gave, if there are merely 10 patent holders?

1 A. Well, Economics 101 tells that you produce
2 until marginal revenue equals marginal cost; and if
3 marginal revenue is \$2.41 and marginal costs for
4 technology licensing alone is \$5.00, you don't make the
5 product.

6 Q. Now in order to perform a proportionality
7 analysis, do you need to know precisely the number of
8 essential patents that are out there?

9 A. Oh, you can get close enough without knowing
10 it precisely, because as has been talked about -- about
11 by the technical experts, there's a lot of technology
12 here. I don't think anyone knows exactly how many
13 patents are in it.

14 Q. And what evidence did you rely on for your
15 proportionality analysis?

16 A. Well, several things. With regard to 802.11n
17 I -- some of them I talked about yesterday. I -- I
18 looked at the Sunlight research report which identified
19 about 4,017 patents.

20 I also looked at the report I talked about
21 yesterday, the TechIPm report. It identified 1484
22 related patents only for the top 12 patent holders. So
23 obviously there's a lot more, but just the top 12.

24 Dr. Shoemake analyzed the Sunlight report and
25 said he felt like there were well over 3000, from

1 analyzing the Sunlight report. Then he did his own
2 independent analysis and came up with over 4600.

3 Q. Thank you, sir.

4 Now let's talk about Ericsson's share of the
5 802.11n-related patents out there.

6 A. Yes, sir.

7 Q. Can you tell us about your analysis of
8 Ericsson's share in that context?

9 A. Yes, sir. Several things I was -- I was able
10 to look at. Some of them we talked about yesterday.

11 One of them was the share of the letters of
12 assurance and that turned out to be one out of 32, and
13 so that was about 3.1 percent. I took a very
14 conservative approach to estimating the number of
15 patents by taking the average number in the letters that
16 actually gave a list.

17 And the reason I say conservative is I applied
18 that to all the letters which meant I -- it was about
19 six patents, which meant I attributed six patents to
20 Intel, six patents to Broadcom. We know they have
21 dozens, scores, if not hundreds of patents. So I know
22 it was very conservative. But looking at that with the
23 claimed patents by Ericsson, I came up with a share of
24 3.43 percent.

25 The Sunlight report attributes a lot more

1 patents that are related somehow to 802.11 to Ericsson,
2 but it also finds a lot more patents, and Ericsson's
3 percentage in that context was the 2.27 percent.

4 The TechIPm report, I think I mentioned the
5 way I did that yesterday, even though they only claim
6 eight patents I gave them the benefit of the doubt and
7 said TI came in 12th with 44 patents. So let's say what
8 if Ericsson had 43; in other words, if they just missed
9 being on the list, which is the -- the maximum number
10 they could have attributed to Ericsson, and with that
11 came up with a percentage of 2.9 percent.

12 And then I was aware of an expert that -- in a
13 case in Germany that had determined for Ericsson that --
14 an expert retained by Ericsson that their percentage of
15 802.11 technology was somewhere between 3 and 5 percent.

16 If you look at just patents, it was about 3.9
17 percent. If you look at patents and applications, it
18 was about 3.1 percent. So, again, everything's just
19 kind of lining up in the same pretty tight range here.

20 Q. And so Ericsson's own expert in litigation --
21 in another litigation determined that Ericsson had 3.1
22 percent of the patents and patent applications in
23 802.11n?

24 A. That's correct, yes, sir.

25 Q. And 3.9 percent of just the patents?

1 A. Yes, sir.

2 Q. Thank you. Now, did you calculate Ericsson's
3 share of 802.11 patents generally --

4 A. I did.

5 Q. -- not just "n" but 802.11?

6 A. I did, yes, sir.

7 Q. Okay. And if we can go to the next slide, can
8 you tell us about that calculation?

9 A. Yes, sir. I think we've got the wrong slide
10 up there.

11 But the -- Dr. Gibson in his analysis, he went
12 through and looked at 802.11 and looked at all the
13 pieces of it that might potentially be impacted by any
14 technology Ericsson was claiming and came up with 1.6
15 percent. And so that was -- that was one data point I
16 had was 1.6 percent. There's an illustration of it
17 here.

18 I then repeated the analysis I did with the
19 letters of assurance and the patents that I calculated
20 in my very conservative way using the whole 802.11
21 portfolio. For that there were 274 letters of assurance
22 of which Ericsson had two, so that's a little less than
23 1 percent. And then there were 933 patents I could
24 identify that way, and Ericsson has claimed 18. So
25 that's like dead on 2 percent.

1 So I had one number around 1 percent, one
2 number around 1.6 percent, one number around 2 percent,
3 and so I used 2 percent in order to be conservative.

4 Q. Thank you.

5 Now, before we get to the actual RAND
6 calculation, did you also consider the ex-ante value of
7 the patented features?

8 A. Yes, sir.

9 Q. Okay. And can you describe your analysis
10 there?

11 A. Well, when you -- when you start talking about
12 the ex-ante value of the patented features, that's when
13 you can begin to talk about non-infringing alternatives.

14 And obviously, we heard Dr. Leonard talk quite
15 a bit about that.

16 In any analysis, I didn't penalize Ericsson
17 for the fact there were non-infringing alternatives
18 available, but I did -- I was aware of it and it was a
19 part of my analysis.

20 Q. Okay. Thank you. And in -- in considering
21 the ex-ante value of -- of the -- of the patented
22 features, you looked at non-infringing alternatives?

23 A. Yes, sir.

24 Q. And you considered the testimony of Dr.
25 Shoemaker, Dr. Heegard, and -- and considered

1 Dr. Leonard's testimony as well?

2 A. I did, yes, sir.

3 Q. Okay. And that acted as a check on your
4 proportionality analysis?

5 A. Yes, sir, it did.

6 Q. And is it consistent with your proportionality
7 analysis?

8 A. It's very consistent, yes, sir.

9 Q. All right. Thank you very much.

10 Well, let's get to the calculation of your
11 royalty rates.

12 MR. ALPER: If we'll go to slide 12,
13 please.

14 Q. (By Mr. Alper) Can you please walk us through
15 the three calculations that you made in this case when
16 it -- in connection with the RAND rate?

17 A. Yes, sir. And I'll -- I'll start with just --
18 in the order they're on here. All of 802.11. Average
19 cost of a chip around 2.41. The 35 percent allocation
20 from the chip down to 802.11, as we heard from Dr.
21 Shoemake. And then the 2 percent that I just described
22 as Ericsson's share of that, gives me 1.7 percent for
23 that royalty.

24 I then did one for the entire 802.11n
25 portfolio which again uses a 2.41 chip price. This

1 times goes down to 17.5 cents -- I'm sorry -- 17.5
2 percent because of the additional allocation down to
3 "n". Again, relying on Dr. Shoemake saying it would be
4 at most that much.

5 And then I used a 3 percent number we just
6 discussed. That one came out to 1.3 cents.

7 And then finally, the one that we talked about
8 yesterday at some length, I used the 2.41 chip price,
9 the 17.5 percent that was the 802.11n portion of the
10 chip; and then brought the rate down from 3 percent to
11 2.25 percent just to account for the fact that all of
12 Ericsson's 802.11n patents are not asserted here.

13 And in all cases, of course, by doing the
14 whole cost of the chip, I made the assumption that all
15 of the money could be allocated to paying -- for
16 technology, which is a pretty conservative assumption in
17 itself.

18 Put all that together and came up with the 0.9
19 cents that we discussed at some length yesterday.

20 Q. Thank you very much.

21 Now, how much is Ericsson seeking in this
22 case?

23 A. 50 cents.

24 Q. Now, is that amount blatantly unreasonable in
25 relation to the RAND royalty rates that you calculated

1 in this case?

2 A. Yes, sir.

3 Q. Okay. And is it, from an economist's
4 perspective, a breach of Ericsson's RAND obligations to
5 seek a rate that is 50 cents per unit?

6 A. Economically it certainly is. The only way
7 you can get to a rate like that is with a lot of hold-up
8 value.

9 Q. Now, is it your understanding that the 50
10 cents per unit is what Ericsson has purported to offer
11 to the Defendants and Intel in this case?

12 A. Yes, sir.

13 Q. Okay. Now I'd like to switch gears briefly
14 from the calculation of a reasonable rate to one of the
15 other requirements of RAND that has to do with no
16 discrimination.

17 A. Yes, sir.

18 Q. And I'd like to know, as an economist, what
19 are the things that are forbidden by the no
20 discrimination part of RAND?

21 A. Well, the biggest one is that -- that you
22 can't refuse to license people, that you have to give
23 everyone that requests a license, a license, and also
24 under similar terms. You could certainly have a
25 quantity discount if you had a huge one versus a small

1 one or something like that that made economic sense, but
2 basically you're giving everyone the same terms.

3 Q. Okay. Now, did you see any evidence in your
4 review of the evidence in this case from Ericsson
5 confirming that obligation?

6 A. Yes, sir, I do.

7 Q. Okay. Let's take a look at the next slide.

8 And what do we see here, Dr. Perryman?

9 A. This is from a -- a brand -- or Ericsson
10 pat -- licensing presentation, and one thing it says,
11 there's no blocking patents, which means you can't put
12 that toll sign there once the standard's already in
13 place basically.

14 It says the overall royalty has to be
15 reasonable cumulatively, taking into account all the
16 technology. And it also says you're waiving the
17 monopoly that the -- that a patent gives you in order to
18 license it on RAND terms.

19 Q. And this in DX 78, this is Ericsson saying
20 this?

21 A. That's correct, yes, sir.

22 Q. And did you --

23 A. It's in this document.

24 Q. And did you review any testimony from any
25 Ericsson licensing personnel that also confirmed that --

1 these obligations?

2 A. Yes, sir, I did.

3 MR. ALPER: And if we can take a look at
4 that on the next slide, please. Actually, no. If you
5 could skip to 15. Yes. Thank you.

6 Q. (By Mr. Alper) What do we see here?

7 A. Well, their chief intellectual property
8 officer, Mr. Alfalahi, testified that -- he was asked:
9 The RAND rate needs to be non-discriminatory, right?
10 He said, That's correct. He was asked, What
11 does that mean?

12 And it says: It's important to offer a
13 license which is fair and reasonable to the players in
14 the industry without discriminating any player.

15 And then he was asked: Including chipset
16 makers, right?

17 He says: Any player.

18 And then he was asked again: Including
19 chipset makers?

20 And he said: Yes.

21 Q. So this is Ericsson's chief of intellectual
22 property, right?

23 A. Yes, sir.

24 Q. And he's saying that it would be a violation
25 of Ericsson's RAND obligations to exclude chipset

1 manufacturers?

2 A. Yes, sir.

3 Q. Okay. Now, these are what Ericsson's
4 obligations are. What -- what is their policy when it
5 actually comes to dealing with the RAND obligations?

6 A. Well, the policy has been, until very
7 recently, that they would not license to chip makers.

8 Q. Okay. And did you review any testimony from
9 Ericsson in this case that confirmed that?

10 A. Yes, sir. Again, Mr. Brismark, who's with us,
11 was asked: As a result, a component supplier of a
12 component implementing a standard could not get a
13 license from Ericsson?

14 And he said, Yes. So he was basically saying
15 the component manufacturers, which in this case would be
16 the chip manufacturers, would not be allowed to get a
17 license.

18 Q. Okay. Now, on -- what was Ericsson's reason
19 for wanting to block the chip makers from access to
20 essential IP?

21 A. Well, one of the things that they testified to
22 and I've seen in documents is simply that -- that they
23 would get more money if they could capture some of the
24 value from the products that were not -- that were
25 bigger -- bigger products, had more stuff in them. They

1 could capture some of that value rather than just the
2 value of their technology.

3 Q. So we put up some testimony from Mr. Forslund.
4 Can you tell us how that relates to what you
5 just testified to?

6 A. Yes, sir. He was asked if one of the major
7 advantages of Ericsson's policy was that it could demand
8 a higher royalty income because these products are more
9 expensive than, for example, Wi-Fi chips; is that right?
10 And he concurred that was right.

11 Q. So Ericsson's goal in refusing to deal with
12 chip makers is to make more money by licensing end
13 products; is that right?

14 A. Certainly one of their goals from what I've
15 seen, yes, sir.

16 Q. Now tell me, is that a legitimate economic
17 justification for blocking chip makers from access to
18 essential IP?

19 A. No, sir, it's not.

20 Q. Okay. And why is that?

21 A. Well, again, the whole concept of RAND letters
22 of assurance and trying to get standards in place is
23 that that sort of thing doesn't happen. You don't --
24 you get compensated based on the fair value of your
25 technology.

1 Q. And is there a real economic cost associated
2 with that type of blocking behavior?

3 A. Oh, absolutely.

4 Q. And is a "more money" justification consistent
5 with RAND obligations?

6 A. No, sir, it's not.

7 Q. All right. Well, Mr. Forslund was open with
8 us in deposition in this case, but what does Ericsson
9 say to the world when it comes to their policy and their
10 justifications for -- for -- or their -- their approach
11 to RAND?

12 A. Well, what they've said to the world is -- is
13 basically they -- they -- they've had their two letters
14 of assurance, which used a standard language for the
15 letters of assurance, and say that they will license
16 to -- to an unlimited -- unrestricted number of
17 applicants to anyone that wants a license on fair and
18 non-discriminatory terms.

19 Q. Now, I think we heard some testimony about
20 this earlier today; but I'm just going to ask you, do
21 these letters of assurance, either the 2003 letter or
22 the 2011 letter, include any indication limiting
23 Ericsson's obligations to license just the end products?

24 A. No, sir.

25 Q. Okay. And is -- does the public have a right

1 to rely on the -- the words that Ericsson put in its
2 letters of assurance?

3 A. Yes, sir. That's in every standard RAND
4 letter.

5 Q. Okay. And I'm going to show you -- I'm just
6 going to switch over to this real fast and zoom in here.

7 This is from -- this is DX -- PX -- excuse
8 me -- this is PX 294, Ericsson's 2011 letter of
9 assurance.

10 And what are we seeing here on the screen?

11 A. Well, paraphrasing, it basically says that by
12 signing this letter you acknowledge that users and
13 implementers of the proposed IEEE standard identified in
14 part C are relying on and will rely on and may seek
15 enforcement of the terms of this letter of assurance.

16 Q. Right. All right. So we have -- this
17 includes users and implementers and they get to rely on
18 Ericsson's letter of assurance?

19 A. Yes, sir.

20 Q. And do users and implementers include the chip
21 makers?

22 A. Yes, sir.

23 Q. Okay. Thank you very much.

24 Now, we've seen that Ericsson's policy is not
25 consistent with RAND; it's not in the letters of

1 assurance.

2 What is Ericsson's justification for trying to
3 block the chip makers, access to RAND?

4 A. Well, the first one I heard was actually
5 sitting here in the -- in the trial, and Ms. Petersson
6 said that a letter that accompanied their 2003 letter
7 basically has the words "fully compliant" in it. And
8 her testimony was that a -- that a -- someone who
9 possessed a license would not be fully compliant unless
10 they -- unless they -- or their product wouldn't be
11 fully compliant unless they were actually used by the
12 consumer.

13 Q. Okay. Now, what -- and this is a -- so this
14 is a letter from Ericsson accompanying its 2003 letter
15 of assurance --

16 A. Yes, sir.

17 Q. -- right?

18 And it includes the words fully -- in fact, it
19 includes the word "fully" in front of "compliant."

20 A. Yes, sir.

21 Q. And it's based on that word "fully" that
22 Ms. Petersson testified at trial a couple of days ago
23 that Ericsson only needs to license products that can
24 actually be used by the consumer?

25 A. Yes, sir. That was her testimony.

1 Q. And that was the justification that Ericsson
2 is raising in order to avoid licensing chip makers?

3 A. Yes, sir.

4 Q. Now, I just want to go back.

5 What we -- I think you testified a few moments
6 ago that what we learned at trial was that the actual
7 thing that was -- is that at issue in this case, the
8 actual product that's at issue are the chips, right?

9 A. Yes, sir.

10 Q. And did Ericsson rely on the compliant nature
11 of the chips in order to prove -- or attempt to prove
12 infringement in this case?

13 A. Yes, sir, they did.

14 Q. And did you hear that from Dr. Nettles?

15 A. Yes, sir, I did.

16 Q. Okay. So for infringement, Ericsson considers
17 that it's enough to show that the chips are compliant;
18 is that right?

19 A. Yes, sir.

20 Q. But when it comes to royalties, that's not
21 enough. What do they have to be, according to Ericsson?

22 A. A new definition of fully compliant, which now
23 means products used by consumers.

24 Q. Okay. So now that's the position now. Did
25 you see any evidence of what Ericsson actually thought

1 about what its commitment required back 10 years ago
2 when it submitted it?

3 A. Yes, sir, I did.

4 Q. Okay.

5 MR. ALPER: If we could go to the next
6 slide, 21.

7 Q. (By Mr. Alper) If you would walk us through
8 this.

9 A. Yes, sir. This is some testimony from
10 Mr. Nordolf, who is strategy and business planning.

11 He's actually the individual that signed that
12 2003 letter.

13 And he was asked: When you were signing the
14 letter on behalf of Ericsson in 2003, it was not your
15 intention to exclude chipset suppliers from receiving a
16 FRAND license to patents that Ericsson considers to be
17 essential to 802.11?

18 And he said: No. I had no such intention.

19 Q. Okay. So at the time of submitting this 2003
20 letter, along with its letter of assurance, Ericsson
21 intended its letter of assurance to apply to everyone,
22 including chip makers?

23 A. According to the individual that signed the
24 letter, yes, sir.

25 Q. And now 10 years later, for the first time

1 publicly ever, a couple of days ago, we hear that
2 actually they didn't intend that; and by putting that
3 word "fully" in that letter, that means that they're
4 excluding chip makers?

5 A. That's what was testified, yes, sir.

6 Q. And that's supposed to be sufficient to put
7 the world on notice of that?

8 A. I'm -- that may be a legal opinion, but that's
9 the only place I've ever heard it.

10 Q. Okay. But it could have -- could it -- from
11 your perspective as an economist who's evaluated the
12 evidence in this case, could Ericsson have been more
13 clear when it comes to a very important obligation like
14 a RAND obligation?

15 A. Sure, absolutely.

16 Q. And did you see evidence in this case that
17 Ericsson thinks that they could have been more clear?

18 A. Yes, sir.

19 Q. Okay.

20 MR. ALPER: And if we take a look at
21 that. Slide 22, please.

22 A. Yes.

23 Q. (By Mr. Alper) What are we seeing here?

24 A. Yes, sir. This is testimony from Ms. Johns,
25 who's the director of patent licensing, and she

1 basically was asked: If Ericsson wanted to be clear
2 with the world that it was excluding a license to chip
3 makers through the alleged 802.11 patents, it could have
4 actually just said that, right?

5 And she said: That could have been clearly
6 stated, yes.

7 Q. Thank you, sir.

8 Now, in the couple of minutes I have left, I
9 just want to touch on one other aspect of this blocking
10 concept.

11 A. Yes, sir.

12 Q. Now, we've been talking about refusing to deal
13 in the context of sitting down at the negotiating table
14 and just refusing to sit down at the negotiating table
15 with chip makers; but is there other forms of refusing
16 to deal, for instance, with the chip makers?

17 A. On, yes, sir. Economically, refusing to deal
18 is something that has the practical effect of refusing
19 to deal. It could be an injunction or seeking an
20 injunction. It could be a rate that's so exorbitant
21 relative to the price of the product that no one would
22 realistically be able to -- to negotiate on that basis,
23 any number of things.

24 Q. So let's talk about that last one for a
25 second.

1 You said you could refuse to deal with
2 someone -- I think what you said is that you could
3 refuse to deal with someone by charging a rate that's so
4 high that it's just a non-starter to begin negotiating;
5 is that right?

6 A. Exactly. Exactly, yes, sir.

7 Q. Okay. Now, have you seen any evidence in your
8 review of the Ericsson documents confirming that that is
9 just not allowed?

10 A. Yes, sir. In fact, Ericsson has stated that
11 very thing.

12 Q. Okay.

13 MR. ALPER: Can we go to the next slide,
14 please?

15 Q. (By Mr. Alper) And if you'll walk us through
16 this document. This is DX 97.

17 A. Yes, sir. Just some highlighted portions,
18 again, from this Ericsson presentation, and it says --
19 one thing it says is, anyone that they have to give a
20 license on FRAND terms to anyone who requests a license,
21 that it has to be aggregated reasonable terms, which
22 means reasonable taking into account the overall
23 licensing situation; and it also has to exhibit
24 proportionality, which we talked about earlier, which
25 they define as reflecting the patent holder's proportion

1 of all essential patents.

2 Q. Now, these requirements that Ericsson is
3 talking about, was that your methodology in this case
4 for determining RAND?

5 A. Yes, sir, it was.

6 Q. Okay. Now, is Ericsson's 50-cent rate so high
7 in relation to the chip price that from an economic
8 perspective, it amounts to a refusal to deal?

9 A. Given all the technology in the chips,
10 absolutely, yes, sir.

11 Q. And does Ericsson's 50-cent rate capture a
12 lock-in value or a patent holdup value?

13 A. Virtually all of it is lock-in and patent
14 holdup.

15 Q. And is that 50-cent rate reasonable?

16 A. No, it is not.

17 Q. Now, was Ericsson asked about whether that
18 50-cent rate is reasonable in the context of a chip
19 price?

20 A. Yes, sir, they were.

21 Q. If we go to the next slide, could you tell us
22 how Ericsson -- Ericsson's chief intellectual property
23 officer answered that question?

24 A. Well, basically, he didn't answer it. Again,
25 Mr. Alfalahi was asked: Is it your position from a

1 FRAND perspective -- is it potentially reasonable to
2 charge a 25- to 50-cent royalty on a 2-dollar product?

3 And his answer was: There's no yes or no
4 answer to this question.

5 Q. Okay. Now, Dr. Perryman, as an economist, is
6 there a yes or no answer to that question?

7 A. Yes, sir, there is.

8 Q. And what is the answer to that question?

9 A. The answer would be no.

10 Q. And one last question. Do you need to be an
11 economist to know the answer to that question?

12 A. I certainly wouldn't think so.

13 Q. Thank you.

14 MR. ALPER: I pass the witness.

15 THE COURT: All right.

16 Cross-examination.

17 CROSS-EXAMINATION

18 BY MR. CAMPBELL:

19 Q. Good afternoon, Dr. Perryman.

20 A. Good afternoon, Mr. Campbell.

21 Q. Have you seen any evidence that HP, RIM, and
22 Buffalo did not know of Ericsson's RAND obligations?

23 A. I don't think I've seen evidence one way or
24 the other. Mr. Bone's calculations indicated rates that
25 did not reflect it.

1 Q. You haven't seen any evidence one way or the
2 other? That was the answer to my question?

3 A. Not that I recall, no, sir.

4 Q. Okay. Now, you understand in this trial,
5 Intel has said that there are indeed -- they've spent \$2
6 billion in R&D, correct, sir?

7 A. That sounds about right.

8 Q. Okay.

9 A. Substantial amount of money.

10 Q. And you understand that Intel's 10-Ks say that
11 their R&D budget includes licensing technology
12 applicable to their R&D initiatives, correct, sir?

13 A. Yes, sir.

14 Q. Okay. You understand from reviewing the
15 transcripts of depositions in this case that Broadcom
16 has testified that the cost of the licenses don't impact
17 the chips, correct, sir?

18 A. I don't recall that. I'll certainly take your
19 word for it.

20 MR. CAMPBELL: Well, let's bring it up.

21 Do we have the Hurlston deposition, Page
22 103 on 5 to 13?

23 Q. (By Mr. Campbell) So Mr. Hurlston was asked:

24 So you don't believe the cost of these
25 licenses impact the cost of the chips; is that right?

1 And he answered: I can tell you definitively,
2 I've never raised the price of a chip based on
3 getting -- taking out a patent license.

4 Do you see that, sir?

5 A. Yes, sir. I would think -- I would think that
6 the prices would be set by the market. I would think
7 that would be the case, yes, sir.

8 Q. Now, you talked about the Sunlight reports,
9 and I don't think we talked about the Sunlight reports
10 yesterday, did we, sir?

11 A. No, sir.

12 Q. Okay. But the Sunlight reports don't measure
13 whether a patent is -- what patents are standard
14 essential, do they?

15 A. No, sir. It's 802.11n relevant or related or
16 something of that nature.

17 Q. Right. So they expressly say they don't
18 measure for standard essentiality, correct?

19 A. Absolutely, yes, sir. I thought I said that
20 before, yes, sir.

21 Q. Now, you understand the Sunlight reports, at
22 the time that 802.11n was ratified, indicated that
23 Ericsson had more high-value patents than Intel,
24 correct, sir?

25 A. Well, I'm aware it said that, but it turns out

1 there was a mistake in the report; that they just
2 actually made a mistake and attributed a high-value
3 patent that actually belonged to Intel to Ericsson.

4 Q. But --

5 A. But -- but I'm aware that they did say that,
6 yes, sir.

7 Q. Those reports aren't very reliable for what
8 we're doing here, are they?

9 A. Well, they're not going to be perfect. As I
10 said, you're not going to find a perfect number of
11 patents or anything like that. Something that goes to
12 that much effort to collect that much information under
13 the standards they used, I think is something we can
14 generally rely on in -- in relation to other sources in
15 order to give us some useful information.

16 Q. Now, you understand that Dr. Harhoff has
17 concluded that a FRAND royalty for Acer is 53 cents to
18 \$1.06, correct, sir?

19 A. I don't recall that.

20 Q. Do you know who Dr. Harhoff is?

21 A. It's not ringing a bell with me right now.

22 Q. Okay. You had it in your slides, this
23 information from this German litigation. Do you recall
24 that, sir?

25 A. Yes, sir.

1 Q. But you don't know who wrote that?

2 A. You know, I don't -- I just don't recall. I
3 read it all at one time. I had copies of it. But I
4 don't recall the individual that wrote it.

5 Q. You've relied on it, but you didn't look to
6 see who the individual was that wrote that report?

7 A. Oh, at the time, I knew. I was thinking
8 Henkel was the person I was thinking about, but it could
9 be someone else.

10 Q. So you understand that he concluded -- do you
11 recall now that he concluded a FRAND royalty for Acer
12 products is 53 cents to \$1.06?

13 A. I would certainly take your representation
14 yes, sir.

15 Q. Well, I can bring it up. It's DX 166.

16 A. What -- whatever your -- your pleasure is
17 fine.

18 Q. Okay. It's at Page 12, Paragraph 58. It's
19 actually in Euros of .4 and .8. Do you know what the
20 conversion is?

21 A. That's about right, yes, sir.

22 Q. Okay. Now, you understand that Dr. Harhoff
23 also said in his report that his attention was
24 restricted to EP and WO patent applications, correct,
25 sir?

1 A. I believe that's correct, yes, sir. It's been
2 a while since I looked at that report.

3 Q. Okay. Well, let's look at Page 20 of DX 166.
4 Attention was then restricted to EP/WO applications.

5 Do you see that, sir?

6 A. Yes, sir.

7 Q. You also understand that Dr. Harhoff stated
8 that he believed his numbers underestimate the true
9 share of Ericsson-owned patents in the relevant
10 portfolio even focusing on EP/WO applications.

11 Do you understand that?

12 A. I don't recall that. Again, I have no reason
13 to doubt you whatsoever.

14 Q. Okay. Well, you relied on that report, right,
15 sir?

16 A. I was remembering a different expert, but I'll
17 accept your representation.

18 Q. Well, you don't believe that's a report you
19 relied on for the opinion on the share of Ericsson
20 standard essential patents for 802.11?

21 A. It was one of the reports in the German
22 litigation. That name is starting to ring a bell with
23 me the more you say it. But in any case, it was -- it
24 was Ericsson's expert in that litigation.

25 Q. I just need -- is that the report you were

1 writing on --

2 A. Yes, sir.

3 Q. -- or is it some other report?

4 A. Yes, sir, I believe it was.

5 Q. Okay. Okay. Now, you understand that

6 Qualcomm and Google have had a similar policy regarding

7 licensing end-user products, correct, sir?

8 A. I am aware of that, yes, sir.

9 Q. Okay.

10 MR. CAMPBELL: If we look at PX 237,
11 that's a letter from Google. And if we zoom in there on
12 the middle paragraph, it says: Google understands that
13 pursuant to IEEE rules, MMI -- MMI is Motorola Mobility,
14 correct, sir?

15 A. Yes, sir.

16 Q. -- is prepared to grant licenses for essential
17 patent claims with a maximum per-unit royalty of 2.25
18 percent of the net selling price for the relevant end
19 product on a go-forward basis, subject to offsets for
20 the value of any cross-licenses or other consideration
21 received from the licensee.

22 You under -- do you see that, sir?

23 A. Yes, sir. I understand that's their stated
24 policy, yes, sir, I do.

25 Q. Okay. And they define net -- net selling

1 price refers to the selling price of a handset, tablet,
2 or the other consumer device before application of any
3 discounts or subsidies such as those provided by mobile
4 operators to end consumers, correct, sir?

5 A. Yes, sir. Again, I am aware -- I'm very aware
6 that's their stated policy.

7 Q. You understand that Ericsson's FRAND rate is
8 50 cents; or for some products, it's a half a percent,
9 correct, sir?

10 A. Yes, sir, I believe that's correct.

11 Q. Okay. And if we look at the Qualcomm
12 statement at PX 448, Qualcomm states on Page 2 that it
13 will expect to charge royalties for a license under its
14 standard essential LTE patents and/or standard essential
15 WiMax patents for complete end-user subscriber devices;
16 is that correct, sir?

17 A. I'm aware that's -- that's Qualcomm's policy
18 with regard to cellular-type technology, yes, sir.

19 Q. It's also for a their WiMax technology,
20 correct, sir?

21 A. Yes, sir.

22 Q. Now, do you have an opinion as to what the
23 total aggregate royalty could be for an end-user
24 product?

25 A. I'd have to have a lot more information than

1 that to answer that question.

2 Q. Well, for 802.11, on an end-user product, like
3 a router or a laptop, do you have an opinion as to the
4 total aggregate royalty that could be paid?

5 A. Just on 802.11?

6 Q. Yes.

7 A. You know, I'd have to look at the profit
8 margins of the companies and a lot of other information
9 to give you that. Given the low price of the products,
10 it's going to be a fairly low number, but that's not a
11 calculation I've made.

12 Q. Okay. All right. Well, if we take a router
13 that's a hundred dollars, and we say the aggregate
14 royalty is 10 percent, and Ericsson's share of the
15 patents is 3 to 5 percent, the royalty on that router
16 would be 30 to 50 cents a unit, correct, sir?

17 A. Oh, I was talking about with regard to the
18 chip inside the router. I -- I haven't done an analysis
19 with regard to the full price of the end products.

20 Q. Okay. Well, was my math right there, if we
21 walk through that?

22 A. I think your math was right. I'm not sure it
23 was the right math.

24 Q. I understand you won't agree -- you won't
25 agree with the analysis, sir. You've got a different

1 view. But the math was correct, wasn't it?

2 A. I believe you did the multiplication
3 correctly, yes, sir.

4 Q. Okay. I want to look at DX 78, which you
5 looked at with your counsel on direct, about Ericsson's
6 position.

7 MR. CAMPBELL: And if we could go to
8 Page 7.

9 Q. (By Mr. Campbell) Ericsson has indicated that
10 the FRAND context should be determined through a
11 bilateral negotiation where the patent holder provides
12 rationale for its rates.

13 Do you agree with that, sir?

14 A. That sounds reasonable to me. That's one of
15 the things that goes into a negotiation, yes, sir.

16 Q. Okay. And you understand that Ericsson has
17 said that's their pros -- is their process and was their
18 process for negotiating with their current licensees.

19 Do you understand that, sir?

20 A. Yes, sir. They -- they've also said that that
21 is supposed to be proportional to the totality of the
22 technology.

23 Q. Well, let's look at Page 9, right? When they
24 say proportionality, you can't do a straight bean count.
25 It has to be reasoned.

1 Do you agree with that, sir?

2 A. Oh, yes, sir, I agree. I could easily see
3 where if you had some of the most important patents and
4 the entire products, you might charge a little bit more
5 for, and I can certainly understand that.

6 Q. Okay. And if you look at Page 11, the note
7 here says: As always, the market determines the price.

8 Would you agree that that's a way to go?

9 A. I think I've said that several times.

10 Q. I think you have, too, sir. And I appreciate
11 you confirming that.

12 MR. CAMPBELL: Okay. Your Honor, I hate
13 to do this, but I have one or two questions that require
14 me to talk about an Intel license, and I understand
15 Intel wants the courtroom sealed for that.

16 THE COURT: All right. The courtroom
17 will be sealed. If you're not protected by the Court's
18 protective order, please leave the courtroom at this
19 time.

20 (Courtroom sealed.)

21 (Pause in proceedings.)

22 (This is Sealed Portion No. 10, and it is
23 filed under separate cover.)

24 (Courtroom unsealed.)

25 (Pause in proceedings.)

1 THE COURT: Please be seated.

2 All right. You may proceed, Mr. Cawley.

3 MR. CAWLEY: Thank you, Your Honor.

4 GUSTAV BRISMARK, PLAINTIFFS' WITNESS, PREVIOUSLY SWORN

5 DIRECT EXAMINATION

6 BY MR. CAWLEY:

7 Q. Mr. Brismark, good evening.

8 Has Ericsson taken steps to ensure that it
9 complies with its RAND obligations in licensing its
10 802.11 patents?

11 A. Yes, we have.

12 Q. How has Ericsson dealt with the issue of
13 royalty stacking?

14 A. We have -- when we set the rate for Ericsson's
15 essential patents to 802.11, we also take into
16 consideration the fact that there are other patent
17 holders who may have essential patents. So that's the
18 way we -- we take that into consideration.

19 Q. Now, when you say -- when you've taken it into
20 consideration, has Ericsson employees, under your
21 supervision, been asked to do research to try and
22 determine how many other patent holders may hold patents
23 to the 802.11 standard?

24 A. Yes.

25 Q. And have you -- you or they, under your

1 supervision, compiled that research and tried to
2 analyze, as best you can, the potential universe of
3 those who may have 802.11 patents?

4 A. Yes. We -- when we set our initial RAND rate,
5 we do such an investigation. And as we've been hearing
6 throughout this -- the witnesses, it's difficult to
7 identify all of the essential patents that are out
8 there.

9 But we made an effort to analyze who are the
10 patent holders and looked at the declaration that did
11 indeed include identifying patents. We made an estimate
12 as to what Ericsson's share of essential patents may be,
13 and we used that in order to -- for us to set the
14 starting point, which we felt would be in line with our
15 RAND obligations.

16 Q. Is this something that Ericsson does once and
17 never again, or is it an ongoing process?

18 A. We have an ongoing process, which is, after we
19 have set the initial rate, we enter into negotiations.

20 So the way we re-evaluate our RAND rate being
21 RAND or our rate being RAND in accordance to RAND, is
22 that we take into account the feedback we get from
23 negotiations, and we use that to update our RAND rate
24 when necessary.

25 Q. How does Ericsson ensure that it does not

1 discriminate?

2 A. We have a reference rate, and reference rate
3 is the rate that Ericsson will offer a licensee, which
4 has no value in a grant-back to Ericsson. So a licensee
5 that has no patents, which has value for Ericsson's
6 products, and that is -- is the reference we start with.

7 And whenever there are other terms and
8 conditions where value is provided to Ericsson or it's a
9 broader agreement, we will do an evaluation of all terms
10 and conditions in order to make an effort to ensure that
11 our RAND commitments are indeed still met.

12 Q. Now, remind us what your title is.

13 A. My title is vice president of strategy and
14 portfolio management within Ericsson's licensing
15 organization.

16 Q. And how many people working with you are in
17 some way responsible for the activities you've just
18 described of -- of trying to ensure that Ericsson
19 complies with its FRAND and RAND commitments?

20 A. As to the 802.11 -- 802.11 standard, we -- we
21 talk about five or six, seven people.

22 Q. Okay. And that's not the only standard body
23 to which Ericsson has extended FRAND or RAND
24 commitments, is it?

25 A. That's correct.

1 Q. How many others?

2 A. There are several. One of the more important
3 ones is ETSI, obviously, which is the standard body in
4 Europe for cellular 2G, 3G, and 4G technologies.

5 Q. Has this issue of FRAND or RAND commitments,
6 what they entail and what procedures are carried out to
7 make sure that they are complied with, been a matter of
8 concern for Ericsson over the past decade?

9 A. Yes, very much so.

10 Q. Has Ericsson participated in initiatives, both
11 in Europe and the United states, to develop this policy?

12 A. Ericsson is a very active participant in those
13 discussions, and we've been so for the past 10 to 15
14 years.

15 Whenever these discussions have been brought
16 up again, Ericsson has been taking a lead in the
17 industry in order to ensure that we continuously develop
18 the meaning of FRAND and make sure that we have a system
19 which can continue to support the standards and the
20 ecosystems behind them.

21 Q. And what -- what kind of organizations or
22 government entities has Ericsson worked with in helping
23 to develop FRAND and RAND policy?

24 A. Recently, we have been working very actively
25 in ETSI and ITU. And we've been working with regulators

1 in Europe, as well as in the U.S.

2 We've been taking part in IEEE, actually, a
3 meeting which is taking place right now in Europe, IEEE,
4 discussing the IPR policy and so forth. There are
5 numerous organizations, and we are present in most of
6 them.

7 Q. Okay. When you traveled to this trial, did
8 you come straight here from a meeting in Brussels to
9 discuss these very issues?

10 A. Yes, I did.

11 Q. Now, we've heard that these negotiations can
12 be complicated. If Ericsson finds itself engaged in a
13 negotiation for a license that includes more than just
14 802.11, how does Ericsson ensure that it complies with
15 its RAND obligations for 802.11 in an agreement that may
16 cover a larger set of patents?

17 A. We would have a procedure where we look upon
18 the values we see in that deal, and the different values
19 accounted for Ericsson, the value we get from that deal
20 from the other party; and we would also do a similar
21 assessment as to the value Ericsson would provide to the
22 other party.

23 And the aim is to ensure that these values
24 meet and that we base them on -- on assumptions which
25 are in line with our FRAND or RAND commitments.

1 MR. CAWLEY: Let's take a quick look at
2 Plaintiffs' Exhibit 238.

3 Q. (By Mr. Cawley) What is this document?

4 A. This is an example of a compilation I just
5 talked about.

6 Q. Why was this document created?

7 A. This was created in order to evaluate the HP
8 agreement, which has been discussed in this courtroom.

9 Q. And the HP agreement, as we've heard, involved
10 not only Wi-Fi patents but also cellular patents?

11 A. Yes.

12 Q. Did Ericsson feel that it was important to
13 analyze how much of that agreement was attributable to
14 Wi-Fi?

15 A. Very much so.

16 Q. Why?

17 A. Because at the time -- and also the main value
18 to HP was a license to Ericsson's Wi-Fi patents. HP
19 also requested license to our cellular patents; but in
20 order to make sure that we actually live up to our
21 FRAND/RAND commitments, we had to put a cap on the
22 cellular patents so that we could ensure that we did
23 continue to meet our RAND commitment for the Wi-Fi and
24 also our FRAND commitments for the cellular.

25 Q. All right. Mr. Brismark, as part of your

1 responsibilities, do you stay informed of negotiations
2 for licenses to Ericsson's Wi-Fi patents?

3 A. Yes. That's part of my daily job, yes.

4 Q. Okay. Have you ever heard that a licensee has
5 complained that the rate it has agreed to pay Ericsson
6 was as the result of lock-in?

7 A. No, I have not.

8 Q. Now, you've described previously Ericsson's
9 policy of a number of years to license the makers of
10 end-user products but not chip makers.

11 How does Ericsson view that policy as
12 consistent with its FRAND commitments?

13 A. Excuse me. Could you repeat the question?

14 Q. Yes. Is that consistent with your FRAND
15 commitments?

16 A. Yes.

17 Q. How so?

18 A. We -- when giving the commitment to IEEE, we
19 commit to license fully compliant end-user products.

20 And by licensing the end-user products, we
21 ensure that we give access to the whole ecosystem,
22 including suppliers and so forth to these manufacturers
23 of end-user products.

24 Q. Well, now, how could you give access to your
25 technology to an entity like Intel if you've refused to

1 license Intel?

2 A. Our policy, which -- which is the main
3 practice in industry, is to license end-user products.

4 And by licensing an unlimited number of
5 companies manufacturing end-user products, we make sure
6 that there is a license to the entire ecosystem, all the
7 players, and there's also access to the technology for
8 the suppliers, including chipset players.

9 And by doing so, we also ensure that we avoid
10 double-dipping since you can only license once in the
11 value chain.

12 Q. Has Ericsson made any effort to block chip
13 makers from producing products that -- that read on
14 Ericsson's patents?

15 A. Ericsson has never attempted to block any
16 chipset player.

17 Q. Recently, though, has Ericsson offered to
18 license Intel to its 802.11 patents?

19 A. Yes.

20 Q. Let me show you Plaintiffs' Exhibit 224.
21 What's this?

22 A. This is a letter from Ericsson to Intel where
23 we offer Intel a license to Ericsson's essential patents
24 for 802.11 at a royalty rate of 50 cents per unit.

25 Q. And why did Ericsson make this offer that

1 apparently is contrary to the long-standing policy
2 you've described?

3 A. We decided to do so in order to make an effort
4 and to resolve the issue found in this court, to find a
5 way of settling.

6 Q. All right. Now, finally, Mr. Brismark, we've
7 heard from the last several witnesses who have testified
8 the suggestion that the IEEE could have simply selected
9 alternative technologies to the technologies on which
10 they actually selected that Ericsson holds essential
11 patents.

12 In your view and your experience, what is the
13 risk with that approach?

14 A. In my view, the --

15 MR. DAUCHOT: Objection, Your Honor, for
16 the record. It calls for opinion testimony from this
17 fact witness.

18 THE COURT: Overruled.

19 A. So in my view, having been part of
20 standardization, I think that the -- the main criteria
21 for selecting what goes into the standard based on
22 technical merit ensures a standard which is continuously
23 being developed to maintain its competitiveness on the
24 market.

25 And I see a major risk, if you would, to go

1 for second best alternative, time after the other, that
2 that specific standard would become redundant or
3 non-competitive and most likely be in competition with
4 an alternative, which may put it out of the market.

5 Q. Thank you, Mr. Brismark.

6 MR. CAWLEY: I pass the witness, Your
7 Honor.

8 THE COURT: All right. Any redirect or
9 recross or cross?

10 [Laughter]

11 THE COURT: It's getting late. You're
12 losing the Judge.

13 CROSS-EXAMINATION

14 BY MR. DAUCHOT:

15 Q. Well, good evening. Good evening,
16 Mr. Brismark.

17 A. Good evening.

18 Q. You scared away Mr. Arovas, so I will be
19 cross-examining you today. I'm Luke Dauchot, and we
20 have not met; is that correct?

21 A. That is correct. And I apologize for scaring
22 away Mr. Arovas.

23 Q. All right. We -- you sat through the entire
24 trial, and I want to point to a couple of portions of
25 the trial, beginning with some of Ms. Petersson's

1 examination.

2 THE COURT: Counsel, before you proceed,
3 let me just explain -- give both parties their time.
4 Plaintiff has used 14 hours and 40 minutes, and
5 Defendant has used 14 hours and 45 minutes. So proceed
6 accordingly.

7 MR. DAUCHOT: I'll take that as a
8 warning, Your Honor.

9 All right. Let's -- so let's hurry up.
10 Mr. Brismark, please speak fast.

11 [Laughter]

12 THE WITNESS: May I read all the exhibits
13 first?

14 [Laughter.]

15 MR. DAUCHOT: All right. No more
16 laughing. We need to move.

17 Can you put up the trial transcript, day
18 6/4, Page 42, Lines 9 through 14.

19 And can you blow up Lines 9 through 14,
20 please.

21 Q. (By Mr. Dauchot) All right. So the question
22 put to Ms. Petersson was: So you're taking the position
23 that the Intel chipset that is in the products being
24 sold here by the Defendants does not comply with
25 802.11n?

1 Answer: It complies.

2 Question: Okay.

3 Answer: It is not fully compliant.

4 Do you see that?

5 A. Yes, I do.

6 Q. Was Ms. Petersson being truthful?

7 A. Yes.

8 Q. All right.

9 MR. DAUCHOT: I'd like you to turn to
10 Ms. Petersson's testimony.

11 Dave, can you put up the transcript at
12 Page 51, Lines 2 through 12?

13 Q. (By Mr. Dauchot) Okay. Ms. Petersson
14 testified at trial that Ericsson offered to license
15 Intel.

16 Do you see that?

17 A. Yes, I do.

18 Q. And she said that the license was for 50 cents
19 per chipset.

20 You see that?

21 A. I see that, yes.

22 Q. And that is truthful testimony?

23 A. That was the offer Ericsson made to Intel,
24 yes.

25 Q. All right. Now, Ms. Petersson testified at

1 Page 56, Lines 20 through 56 -- through 57/3.

2 MR. DAUCHOT: Dave, put that up.

3 Q. (By Mr. Dauchot) -- that the offer was made to
4 Intel roughly eight weeks ago.

5 Is that consistent with your memory?

6 A. I think there was a first offer in a -- form
7 of a letter, which was sent on March 8th. And then
8 there was a complete agreement sent to Intel end of
9 April.

10 Q. That's -- that's exactly right.

11 A. I suppose Ms. Petersson referred to the
12 complete agreement.

13 Q. The complete agreement. Because you'll
14 recall -- I don't know if you remember it -- in response
15 to the March letter that you put up, there was a
16 response from Intel -- and all of that will be submitted
17 into the record -- to the effect that they'd like to see
18 the entire agreement.

19 Do you recall that letter from Intel?

20 A. I do.

21 Q. And in response to that, Ericsson sent the
22 April full agreement that you just testified to,
23 correct?

24 A. That is correct.

25 Q. All right.

1 MR. DAUCHOT: Let's put up PX 603.

2 Q. (By Mr. Dauchot) And that is the agreement
3 that Ms. Petersson testified to the Court and jury under
4 oath that constitutes an offer to license Intel chips,
5 correct? Or chipsets.

6 A. I believe that's correct, yes.

7 Q. All right.

8 MR. DAUCHOT: Let's look at PX -- let's
9 look at Section 2.1.

10 Dave, can you put up 2.1? And can you
11 blow up the license grant?

12 Q. (By Mr. Dauchot) Okay. Now, the license grant
13 is a grant Ericsson proposes to grant to Intel
14 worldwide, non-transferable, et cetera, et cetera.

15 License under the licensed patents to make,
16 have made, use, import, sell, and offer for sale and
17 company products, right?

18 A. The license is for company products, yeah.

19 This -- that is correct, yes.

20 Q. Okay. Good.

21 MR. DAUCHOT: Let's turn to Section 1.3
22 for the definition of company products. And can you
23 blow that up.

24 Q. (By Mr. Dauchot) It says: Company products
25 shall mean all products of company that are fully

1 compliant.

2 Do you see that?

3 A. I see that.

4 Q. Now, you just testified five minutes ago that
5 Ms. Petersson said that Intel's chips are not fully
6 compliant.

7 A. That is correct.

8 Q. So this is a license to what? Illusory;
9 license to nothing?

10 A. This is the first offer of a draft agreement
11 to Intel, and I -- I would suspect that before this
12 agreement would have been signed, would Intel be
13 interested that an edit would have been --

14 Q. Yeah. Mr. Brismark, my question is this:
15 Ms. Petersson testified to the Court and to the jury
16 that eight weeks ago, there was a license made to Intel,
17 to Intel chips.

18 And are you now testifying under oath that
19 what Ms. Petersson testified, and the only offer in the
20 record, is one that Ericsson would anticipate would
21 maybe somehow get modified down the end of the road? Is
22 that what you're testifying to under oath?

23 A. I think that Ms. Petersson testified --

24 Q. Sir, is that what you are saying under oath?

25 A. -- that based on --

1 Q. Yes or no.

2 A. I would like to make a comment about that.

3 Q. Can you answer my question yes or no?

4 A. I cannot.

5 Q. You cannot answer my question yes or no.

6 You will agree, though, that this particular license,
7 sir, the one Ms. Petersson testified to and the one that
8 you just testified to two minutes ago is not a license
9 to Intel chips, correct?

10 A. I can testify --

11 Q. Correct, sir?

12 A. -- that an edit would have been found --

13 Q. Sir, I'm not talking about --

14 A. -- and the discussion would have continued.

15 THE REPORTER: Excuse me.

16 THE COURT: All right, Counsel. The
17 Court Reporter cannot write down both of you talking at
18 the same time, so let's slow down, one at a time.

19 MR. DAUCHOT: Fair point, Your Honor.

20 Q. (By Mr. Dauchot) And, Mr. Brismark, I am not
21 talking about edits to this agreement down the road. I
22 am talking about this exhibit.

23 This exhibit is not a license to Intel to
24 manufacture chipsets; am I correct? Am I correct?

25 A. This exhibit may still contain edits, which

1 would have been needed to correct before a complete
2 license had been signed.

3 Q. And that is not what Ms. Petersson testified
4 to under oath to the jury and to the Court; am I
5 correct?

6 Ms. Petersson testified to the Court and to
7 the jury that there had been an offer made to Intel's
8 chips eight weeks ago.

9 Do you recall that testimony?

10 A. Yes.

11 Q. And is that testimony accurate, sir?

12 A. The intent of the letter was to offer a
13 license to Intel --

14 Q. All right, sir.

15 A. -- based on these terms, and they may still
16 continue (sic) some edits.

17 Q. Now, the 2003 LOA, letter of agreement (sic),
18 PX 293, you're familiar with that, correct?

19 A. No.

20 Q. PX 2 --

21 MR. DAUCHOT: I'm sorry. I'm sorry.
22 PX 293, David, the letter of assurance.

23 A. If I may see -- I may be familiar, but I have
24 to look at it first.

25 Q. (By Mr. Dauchot) Well, you're familiar with

1 Ericsson's letter of assurance to Intel and others?

2 A. Yes, I'm aware of this.

3 Q. All right, sir. Now, let's look -- it's your
4 testimony that the fully compliant language is -- is --

5 MR. DAUCHOT: Strike the question.

6 Q. (By Mr. Dauchot) It is your testimony that
7 under this agreement, this letter of assurance, Ericsson
8 only has an obligation to license fully compliant
9 products, correct?

10 A. Yes, that's my testimony.

11 Q. Correct. And now, you agree that this letter
12 of assurance does not define what fully compliant means;
13 am I right?

14 A. That is correct.

15 Q. That is correct.

16 And Ms. Petersson testified that according to
17 you-all at Ericsson, fully compliant means something
18 that's used by consumers, correct?

19 A. That would be one description, yes.

20 Q. One of them? Are there more?

21 A. I think you could -- could maybe find other
22 descriptions that are proper. I think this is one
23 description.

24 Q. Well, where do I look?

25 A. Excuse me?

1 Q. Where does Intel look? Is there a book?

2 A. I think that if you look up on the practice in
3 the industry how licensing is being done, you would find
4 that fully compliant and licensing at end-user level
5 is --

6 Q. My question is: Where do we look for your
7 definition of fully compliant? Where does Intel look?
8 Is there a book? Is there an article? Is there some --
9 something that would tell Intel: Put everyone on notice
10 what you-all mean by fully compliant?

11 A. I am not aware of any book.

12 Q. Okay. Now, I'd like to show you -- and this
13 is going to be -- this was submitted into -- into
14 evidence here, Mr. Alfalahi's deposition, a clip from
15 it. Mr. Alfalahi is the person to whom you report,
16 correct?

17 A. That is correct.

18 Q. All right. Now, it is your position that the
19 203 -- the 2003 letter of assurance is limited to fully
20 compliant products, correct?

21 A. That is my understanding.

22 Q. And fully compliant products, according to
23 your definition, is basically end products, right?

24 A. End product is a fully compliant product, yes.

25 Q. Okay. Now, let's show the Alfalahi clip,

1 LB92, please. This is your boss.

2 (Video playing.)

3 QUESTION: So my question is: Where in
4 this letter of assurance does it say that Ericsson's
5 duty to extend a license to an unrestricted number of
6 applicants applies only to applicants who make, sell, or
7 use end product --

8 ANSWER: It doesn't --

9 QUESTION: -- as opposed to component
10 products?

11 ANSWER: It doesn't say.

12 QUESTION: And the same is true of
13 Exhibit 10, correct?

14 ANSWER: Yes.

15 (End of video clip.)

16 Q. (By Mr. Dauchot) Now, that's your boss, right?

17 A. Yes.

18 Q. That's the director of Ericsson's licensing
19 program, correct?

20 A. Yes. And he has -- he delegates some
21 responsibilities to me. For instance, looking after our
22 FRAND commitment.

23 Q. Can we assume that Mr. Alfalahi knows what
24 he's talking about when he's talking about the Ericsson
25 letters of assurance?

1 A. I think he trusts me to do a good job.

2 Q. Are you saying that you can't trust him?

3 A. I trust him.

4 Q. You trust him. All right.

5 Now, is a modem a consumer -- an end -- an end
6 product?

7 A. It depends. If it's something that an end
8 user could easily enable to work, then it's -- then it's
9 an end product.

10 Q. Okay. So fully compliant product not only
11 means a product that an end user can use, but it has to
12 be one that an end user can easily use? Is that -- is
13 that part of the definition of fully compliant, just so
14 I have it?

15 A. As I said, there are many definitions, but
16 "can use" is fine as well.

17 Q. I understand. You were telling me there are
18 many definitions. I don't know where to look. Intel
19 doesn't know where to look. In fact, no one knows where
20 to look.

21 You just testified under oath that fully
22 compliant, a modem, may or may not be fully compliant
23 depending on how easily a consumer can use it. Is that
24 what you just -- that's what you just said, right?

25 A. I said that it's fully compliant if the end

1 user can easily install it, yes, I said that.

2 Q. Can easily install it?

3 A. Yeah. I could also say --

4 Q. Okay. Now, what if we take a consumer
5 who's --

6 THE COURT: Counsel. Counsel.

7 MR. DAUCHOT: I'm sorry, Your Honor.

8 THE COURT: You're interrupting and
9 cutting off the witness.

10 A. I could also have said that if an end user can
11 install it, then it's fully compliant, and it's an end
12 product.

13 Q. (By Mr. Dauchot) So if a consumer -- so we
14 take consumer A, who's technically inept and can't
15 install it, and take consumer B, who's technically
16 proficient and can install it, the product is fully
17 compliant as to the one who is technically capable and
18 the one -- and not compliant as to the one who can't put
19 it in? Is that -- is that what you're testifying to?

20 A. I'm testifying that if an end user can install
21 a modem and use it, then it's an end product.

22 Q. All right. Now, you understand that you're --
23 okay. So it depends on the consumer, what the consumer
24 can do?

25 A. It always does.

1 Q. All right. Now, you said that the -- you
2 testified --

3 MR. DAUCHOT: I'll strike that question.

4 I am now running out of time. Your
5 Honor, if I could just have one second here to see if
6 there's anything in particular that I wanted to touch
7 on.

8 THE COURT: Certainly.

9 (Pause in proceedings.)

10 Q. (By Mr. Dauchot) Oh, one additional point, and
11 I'll -- and then I'll wrap up.

12 You mentioned, in response to questioning,
13 about the issue of aggregation?

14 A. Yes.

15 Q. And you said -- you testified that Ericsson's
16 very careful about making sure that its rate complies
17 with the aggregation concept, right?

18 A. I testified that we are very careful to ensure
19 that our rates are in line with our FRAND or RAND
20 commitments.

21 Q. Right. Now, you remembered Ms. Petersson
22 testifying about that aggregation effort in the context
23 of Defendants' Exhibit 65. Do you remember that, that
24 chart that was put up?

25 A. May I see it?

1 Q. Well, do you recall it?

2 A. I'd like to see it before I answer that
3 question.

4 Q. All right.

5 MR. DAUCHOT: DX 65. Dave, do you have
6 it?

7 A. Yes.

8 Q. (By Mr. Dauchot) You recognize it?

9 A. Yes, I recognize that.

10 Q. And that is one of Ericsson's efforts to come
11 up with accurate aggregation, right?

12 A. This is an effort for Ericsson to ensure that
13 when we set our initial rate, we believe that it's in
14 line with the RAND commitment.

15 Q. All right. Now, you testified to -- you
16 testified to other documents --

17 MR. DAUCHOT: Well, strike the question.

18 No further questions. Thank you.

19 THE COURT: All right. Redirect?

20 MR. CAWLEY: Just a bit, Your Honor.

21 REDIRECT EXAMINATION

22 BY MR. CAWLEY:

23 Q. Mr. Brismark, I just don't want there to be
24 any confusion about the letter that Ericsson sent Intel
25 and the draft license agreement.

1 MR. CAWLEY: First of all, let's look
2 again at Plaintiffs' Exhibit 224.

3 Q. (By Mr. Cawley) Now, tell us again what this
4 is.

5 A. This letter is sent from Ericsson to Intel to
6 inform that Ericsson is willing to offer Intel a license
7 without any grant-back at a rate of .50 dollar per
8 device.

9 Q. Okay. That's what it says on the second
10 paragraph of the -- or excuse me -- the second sentence
11 of the letter, right?

12 A. Yes.

13 Q. Did you participate in the decision by
14 Ericsson to make this offer to Intel?

15 A. Yes.

16 Q. And did Intel respond to it?

17 A. Yes, they did.

18 Q. What did they request?

19 A. They requested Ericsson to send a complete
20 draft agreement with all the terms and conditions.

21 Q. And did Ericsson comply with that request?

22 A. Yes, we did.

23 Q. Did Ericsson have prepared by its counsel a
24 proposed draft license agreement?

25 A. Yes.

1 Q. And did Ericsson transmit that to Intel?

2 A. Yes, we did. And on April 25, I recall.

3 Q. And was Ericsson prepared to have negotiations
4 with Intel over the terms of that draft license
5 agreement?

6 A. Yes, we had.

7 Q. Did Intel ever request that?

8 A. No.

9 Q. Did Intel ever respond to the proposed draft
10 license agreement in any form?

11 A. Not with any comments on the draft agreement,
12 as far as I can recall.

13 Q. Okay. Thank you, sir.

14 MR. CAWLEY: I'll pass the witness, Your
15 Honor.

16 THE COURT: All right. Thank you.
17 Anything further?

18 MR. DAUCHOT: One brief point, Your
19 Honor.

20 RECROSS-EXAMINATION

21 BY MR. DAUCHOT:

22 Q. Mr. Brismark, you do understand that there
23 were -- that there has been a Court-ordered mediation in
24 this case?

25 A. Yes.

1 Q. And you understand that Intel and Ericsson
2 have participated in that?

3 A. Yes, I do.

4 Q. Okay. And those -- that stays confidential
5 pursuant to a mediation privilege.

6 You understand that?

7 A. That's my understanding, yes.

8 Q. Thank you.

9 MR. DAUCHOT: No further questions.

10 THE COURT: All right. Thank you.

11 Anything further?

12 MR. CAWLEY: Nothing further, Your Honor.

13 THE COURT: All right. You may step
14 down.

15 All right. Who will Ericsson's next
16 witness be?

17 MR. CAMPBELL: Your Honor, we call
18 Dr. Scott Nettles.

19 THE COURT: All right. Dr. Nettles.

20 All right. You may proceed.

21 MR. CAMPBELL: Thank you, Your Honor.

22 SCOTT NETTLES, Ph.D., PLAINTIFFS' WITNESS,

23 PREVIOUSLY SWORN

24 DIRECT EXAMINATION

25 BY MR. CAMPBELL:

1 Q. Good evening, Dr. Nettles.

2 A. Good evening.

3 Q. Have you analyzed the non-infringing
4 alternatives that were disclosed in Mr. -- or
5 Dr. Heegard's report?

6 A. Yes, sir, I have.

7 Q. Do you believe that the alternatives he
8 discussed today would have been available, acceptable,
9 and non-infringing in early 2007?

10 A. No, sir, I do not.

11 Q. Before we get into the specifics, let me ask
12 you some general questions.

13 Have you seen any -- seen any evidence that
14 the alternatives were actually proposed to the IEEE?

15 A. No, sir, with the exception of the alternative
16 that Dr. Heegard clarified was actually part of the
17 standard.

18 Q. Have you seen any evidence that the
19 alternatives were actually considered by the IEEE, other
20 than the one that's actually part of the standard?

21 A. No, sir.

22 Q. Are you aware of any testing done to confirm
23 that these alternatives would work?

24 A. No, sir.

25 Q. Have you seen any evidence that the Defendants

1 have actually implemented any of these alternatives?

2 A. Well, I'm not sure about the one that's in the
3 standard. I haven't seen any specific evidence. But in
4 general, no.

5 Q. Now, since the 802.11n standard came out, the
6 IEEE has released a new 802.11 standard, correct?

7 A. Yes, sir.

8 Q. That was the 2012 version?

9 A. That's right.

10 Q. What did the 2012 version do?

11 A. It rolls up all the changes from 2007 up until
12 2012 into a new sort of single unified standard.

13 Q. And other than the one alternative that's in
14 the standard, has the non-infringing alternatives that
15 Dr. Heegard proposed been voted into that standard?

16 A. No, sir, they haven't.

17 Q. Have you seen any evidence that Intel or any
18 other Defendant proposed any of Dr. Heegard's --
19 Dr. Heegard's alternatives for that standard?

20 A. No, sir.

21 Q. All right. Well, let's talk about the '215.

22 Do you understand that Dr. Heegard's
23 alternative, proposes removing the Multi-TID and
24 compressed BlockAck subfields?

25 A. Yes, sir, I understand that.

1 Q. Would this be alternative -- would this
2 alternative be available and acceptable?

3 A. No, sir, I don't think so.

4 Q. Why not?

5 A. Well, the BlockAck -- a compressed BlockAck
6 bit, that lets you choose between the standard BlockAck
7 and the compressed BlockAck. And eliminating that bit
8 would create a backwards compatibility issue with
9 respect to 802.11e.

10 Q. And why would that be a problem?

11 A. Because "e" has the normal uncompressed
12 BlockAck. And so if you only had the com -- compressed
13 BlockAck, then that would work in "e" products and
14 wouldn't provide backward compatibility.

15 Q. So if someone had an 802.11e product, how
16 would they be affected?

17 A. Well, it wouldn't work with the "n" standard.
18 And in general, the 802.11 standards have been quite
19 meticulous about providing backward compatibility.

20 Q. What about the Multi-TID BlockAck? What does
21 that relate to?

22 A. That relates to the power save multi-poll
23 feature of 802.11n.

24 Q. And how would that be impacted?

25 A. It would basically -- it's a key feature, the

1 power save multi-poll. So it would effectively disable
2 that mode.

3 Q. Was that important -- was the power save
4 multi-poll feature important?

5 A. Well, it was included in the standard, and
6 apparently, at least some people wanted to make it
7 mandatory.

8 Q. Okay. Now, does -- does the '215 patent and
9 the method that is used in the standard, does that allow
10 for future growth?

11 A. Yes, sir, it does.

12 Q. How does it do that?

13 A. Well, there's still one choice left, the
14 reserve field. And as we've heard, standards tend to
15 evolve, and so that reserve field would provide for
16 future growth.

17 Q. Okay.

18 MR. CAMPBELL: Let's turn to the '568
19 patent.

20 Q. (By Mr. Campbell) Do you understand
21 Dr. Heegard's alternative for this patent is
22 prioritizing packets at the transmitter without
23 including a TID field in the packets?

24 A. I do.

25 Q. Would this alternative be available and

1 acceptable?

2 A. No, sir.

3 Q. Why not?

4 A. Well, the reason it's not acceptable is
5 because Dr. Heegard neglected the case where the
6 receiver is also a transmitter. And that's an important
7 case, because that's the case of the router when the
8 router is -- is taking a communication from one terminal
9 and then forwarding it to another terminal that's in the
10 same local area network.

11 And in that case, if you don't transmit that
12 traffic identifier, then the router doesn't know what
13 priority to give to its transmission. And so as a
14 result, the retransmissions from the router would not be
15 prioritized.

16 And that would defeat the whole purpose of
17 having these priorities. And, of course, the local case
18 is an important one.

19 Q. Why is it important? Can you give me an
20 example of when this might happen?

21 A. Imagine you want to stream video from your
22 laptop to your television in your home. It's going to
23 go through your router. I have streaming media that I
24 use in my home to play music. Again, that goes through
25 my router. This would eliminate the prioritization for

1 those kinds of media.

2 Q. Okay. All right.

3 MR. CAMPBELL: Let's turn to the '625 and
4 '435 patents.

5 Q. (By Mr. Campbell) You understand Dr. Heegard
6 offered two alternatives for that. One was send a
7 single ACK with no window, and a second was send a
8 BlockAck with no window.

9 Do you recall that?

10 A. Yes, sir, I do.

11 Q. Did you review Dr. Heegard's report regarding
12 these alternatives?

13 A. I did.

14 Q. Does the report provide enough detail to
15 analyze these alternatives?

16 A. No, sir, not really.

17 Q. Does the report provide -- well, how much
18 detail did the report provide on these alternatives?

19 A. Well, it's just a very brief sort of
20 statement, very similar to the slides he gave, except
21 the slides that he gave included a slide that clarified
22 that the first alternative he intended to be very
23 similar to the normal way that 802.11 packets worked
24 before there was -- there was aggregation.

25 So there wasn't even that much detail in his

1 set of proposals.

2 Q. So is it clear how these alternatives would
3 fit into the 802.11n standard?

4 A. Not really.

5 Q. What information is missing?

6 A. Well, for example, it doesn't explain how
7 the -- the receiver would deal with the case where it
8 needed to move on, where something was missing and had
9 been discarded at the transmitter. That wasn't clear.
10 It wasn't clear exactly when the transmitter
11 would decide to retransmit things. It wasn't clear what
12 the transmitter would do with respect to this moving-on
13 issue. There was no code provided. It was just a very
14 sort of high-level -- level sketch.

15 Q. Based on your best understanding of these
16 alternatives, would they be available and acceptable?

17 A. No, sir, I don't think so.

18 Q. Are these alternatives non-infringing?

19 A. That -- that part is a little harder to
20 analyze, especially with respect to the second one. It
21 would depend on some of those design details, I believe.

22 Q. Okay. Well, let's take the first one:
23 Sending a single ACK with no window. What are the
24 problems with that alternative?

25 A. Well, that's the one that actually is

1 incorporated into the current standard in the aggregated
2 MSDU feature, and I'd note that none of the Defendants
3 actually appear to implement that feature.

4 And the problem with that is that if there's
5 any loss, the entire aggregated MSDU has to be
6 retransmitted.

7 And one of the things that's important to
8 understand is that when you aggregate, you make the
9 packet, the thing you're going to transmit, longer.

10 That makes loss more likely, and it also makes
11 it more expensive to retransmit the whole thing.

12 And so both of those factors tend to suggest
13 that there would be a performance impact, especially if
14 you make the aggregate large. And that's exactly the
15 point of aggregation is to try to make the aggregate
16 large.

17 Q. What about the lack of a window? How does
18 that impact things?

19 A. Well, I think Dr. Heegard made it a little
20 more clear today when he showed a slide. There the real
21 question is: How do you deal with this issue of what if
22 there's some loss that you want to move on beyond?

23 And I think that that was a little bit more
24 clear, because he said, basically, do it the way we did
25 it for single packets in the original 802.11 techniques.

1 Q. Okay. What are the problems with the second
2 alternative?

3 A. The second alternative has many of the same
4 problems. And in fact, Dr. Heegard even admitted today
5 when he testified that it would have performance issues.

6 The biggest issue is that, although you're
7 going to retransmit sub-blocks, let's call them, there's
8 still no way to move ahead in the process.

9 In the current standard, when you need to
10 retransmit a sub-block, the window can move. You can
11 continue to accept new packets while the old packet is
12 being retransmitted.

13 Here, his proposal wouldn't allow that to
14 happen. And it's not clear what the performance impact
15 would be without some kind of -- some kind of study or
16 testing.

17 Q. Okay. Let's finally talk about the '223
18 patent.

19 Do you understand that Dr. Heegard's
20 alternative for that is to use non-Intel chips?

21 A. That's -- that seemed to be his proposal.

22 Q. And were there any reasons why the chips that
23 don't implement the timer are inferior to the Intel
24 chips that do implement the timer?

25 A. Well, the timer gives you tighter control over

1 when you're going to discard packets. And clearly,
2 since it was put into the standard, the -- the -- the
3 standards body considered that to be an important
4 feature.

5 So I would say that's -- that's evidence that
6 it's inferior.

7 Q. Is there -- are there actually two mechanisms
8 in the standard to keep track of resending packets?

9 A. Yes, sir. There's a retry count, and then
10 there's the timer.

11 Q. And is there a benefit to using both
12 mechanisms?

13 A. Yes, sir. Sometimes the retry count is going
14 to give you a more precise idea about when to drop a
15 packet, and sometimes the timer is going to give you a
16 little more precise idea.

17 Q. And do you understand Intel's chips are
18 typically more expensive and at the high end of the
19 market?

20 A. I do.

21 MR. CAMPBELL: Thank you, Dr. Nettles.

22 THE COURT: All right.

23 Cross-examination.

24 MS. PIEPMEIER: Thank you.

25 Sarah Piepmeier for Defendants, and I'm

1 going to try to do a sub-30-second cross, which I've
2 never done before. So we'll see how that goes.

3 CROSS-EXAMINATION

4 BY MS. PIEPMEIER:

5 Q. Good evening, Dr. Nettles.

6 You didn't do any testing to confirm any of
7 the opinions you've just expressed with respect to any
8 of the non-infringing alternatives that Dr. Heegard
9 identified, correct?

10 A. That's correct.

11 Q. And today you didn't express an opinion on
12 whether or not any of those non-infringing alternatives
13 actually infringed.

14 A. No, sir. I think -- I mean, no, ma'am. I
15 believe that would require further analysis.

16 Q. Thank you.

17 MS. PIEPMEIER: Pass the witness.

18 THE COURT: Very good job.

19 [Laughter]

20 THE COURT: Redirect?

21 MR. CAMPBELL: No, Your Honor.

22 THE COURT: All right. Thank you.

23 All right. Who will be Plaintiffs' next
24 witness?

25 MR. CAMPBELL: Your Honor, the final

1 witness, we call Mr. Bone.

2 THE COURT: All right. Mr. Bone.

3 JOHN BONE, PLAINTIFFS' WITNESS, PREVIOUSLY SWORN

4 DIRECT EXAMINATION

5 BY MR. CAMPBELL:

6 Q. Good evening, Mr. Bone.

7 A. Good evening.

8 Q. Let's get right to it.

9 You heard Dr. Leonard talk about holdup,
10 correct, sir?

11 A. I did.

12 Q. As part of your analysis, did you find that
13 any of Ericsson's actual agreements included holdup?

14 A. No.

15 Q. Can you tell us what you did to evaluate
16 whether Ericsson's agreements included holdup?

17 A. I considered -- excuse me -- a number of
18 factors in connection with the actual real-world
19 licenses to determine whether or not there was holdup.

20 Q. Can you tell the Court what factors you
21 considered?

22 A. Sure. Excuse me.

23 The first factor that I considered was
24 Ericsson's long-term best interest. And that is,
25 Ericsson is a holder of a significant number of standard

1 essential patents, as we've heard, not only -- excuse
2 me -- in the cellular space, but also the Wi-Fi space.

3 And -- and they have those commitments. They
4 have FRAND commitments as it relates to their cellular
5 technology, and they have the RAND commitments as it
6 relates to their Wi-Fi technology. And so as -- and
7 they've not only done that historically, but they want
8 to do that on a long-term basis.

9 And so -- excuse me -- in terms of credibility
10 in the marketplace and their ability to not only license
11 others but also to contribute technology to these
12 very -- these standard-setting bodies, it is in their
13 long-term best interest to not extract holdup value when
14 they enter into agreements.

15 Another factor that I considered was the fact
16 that each of Ericsson's licensees, except for one, was a
17 publicly-traded company. So they had a fiduciary
18 responsibility to make sure that they entered into
19 agreements at rates that would maximize their share of
20 the profits.

21 And so, therefore, it would not be consistent
22 with their fiduciary responsibility to enter into
23 agreements that contained holdup.

24 I also considered the fact that RIM and HP are
25 very sophisticated licensees -- licensees. And they've

1 entered into numerous license agreements with other
2 parties, and it would not have been consistent with
3 their abilities to negotiate, and they would want to
4 negotiate their best deal in light of Ericsson's RAND
5 obligations.

6 Also, Ericsson did, in fact, make RAND
7 obligations; and as I understand it, the licensees were
8 aware of Ericsson's RAND obligations when they entered
9 into these agreements.

10 And --

11 Q. What about the range of the license rates?

12 A. Well, that is, I think, also instructive, in
13 that the -- given the fact that all of these agreements,
14 all these negotiations were bilateral negotiations,
15 confidential negotiations between the parties, it is, I
16 think, somewhat telling, when you look at the fact that
17 the rates that the parties agreed to were -- are roughly
18 in the same ballpark.

19 Q. What -- that about the timing of the
20 agreements?

21 A. So a number of the agreements, I think at
22 least four of them -- you have the Option agreement --
23 excuse me -- the RIM agreement, Ascom, and Buffalo were
24 all either agreed to; or as it relates to the Buffalo
25 agreement, were in the process of being negotiated

1 before the 802.11n standard was finalized or adopted.

2 And so if at any time prior to that the
3 licensees believed that Ericsson was extracting holdup
4 value, they could have gone to the IEEE and complained
5 that Ericsson was extracting holdup.

6 There is no evidence that any of the licensees
7 went to the IEEE and complained that Ericsson was, in
8 fact, extracting holdup.

9 Q. Is there a name for the type of agreement
10 where the license is entered into before the standard is
11 adopted?

12 A. Yes. Those are ex-ante license agreements.

13 Q. Mr. Bone, in your opinion, do the rates
14 reflected in Ericsson's licenses account for its RAND
15 commitment?

16 A. In my opinion, they do.

17 Q. What else do the actual market rates reflect?

18 A. I covered a little bit of this in my testimony
19 last week, and that was the market rates take into
20 account a number of factors, one of which is the fact
21 that the -- Ericsson's technology, the rates that people
22 were willing to pay -- considered the value of
23 Ericsson's technology, in light of all the other
24 technology that's embedded in the machine, whether it's
25 a laptop or a router; and that would include other

1 standard essential patents that may exist.

2 So it addresses the stacking issue. In other
3 words, the licensees would have been aware of the
4 stacking issue, yet still entered into these rates.

5 It also factors in -- the market rates factor
6 in non-infringing alternatives. And so we've heard some
7 theories on some possible non-infringing alternatives.

8 The rates that other companies were willing to
9 pay take into account what other companies would be
10 willing or could have done.

11 And it would suggest that if there were
12 alternatives, as Dr. Leonard would suggest, then these
13 would be irrational licensees by willing -- by the fact
14 that they entered into these agreements with Ericsson at
15 the rates they did.

16 Q. What about the cost of the component, such as
17 the price of the chip?

18 A. So market rates also take into account the
19 fact that the chip itself can sell as low as \$1 to \$2
20 per chip, and so the fact that the market rates --
21 people were willing to pay Ericsson's rate, despite the
22 fact that the chips were only a dollar to \$2 at times.

23 Q. Now, Defendants have suggested that a number
24 of these agreements are broad cross-licenses or include
25 rights to other technology, and therefore, the rates

1 reflect something more than just for the
2 patents-in-suit.

3 Are they right?

4 A. Well, the agreements do include other
5 technology. However, if you look at the agreements, the
6 agreement -- the terms of the agreements are structured
7 in such a way that you can identify the specific value
8 associated with the 802.11 patents in most cases.

9 In some cases, you have to go beyond the
10 actual four corners of the agreement and look at
11 supporting documentation that would suggest what the
12 parties were -- in this case, that relates -- at least
13 as it relates to the HP agreement, what Ericsson
14 believed was an appropriate rate.

15 Q. So were you able to isolate the value
16 attributable to the 802.11 portfolio?

17 A. Yes, I was.

18 Q. Now, Defendants' claim that the royalty should
19 be limited to the price of the chip, are there any
20 reasons why that is not appropriate?

21 A. Well, that's -- I don't believe it would be
22 appropriate for a number of reasons.

23 One, that's not what we see in practice. We
24 don't see the agreements entered into. And the rates
25 that other people were willing to pay do not suggest

1 that it would be limited to just the price of the chip.

2 Also, there is evidence that Intel and
3 Broadcom and others, to the extent they do pay for
4 technology, for IP rights, that's included in their R&D
5 expense.

6 And so as we've heard during the trial, Intel
7 has spent well over \$2 billion in R&D. So whatever
8 royalty they would pay, more than likely would be
9 wrapped up into the 2-billion-dollar R&D expense and not
10 necessarily burdened on to the chip.

11 Q. Okay. Now, did you -- do you agree that the
12 cost of a design-around is an appropriate input in
13 determining the price of the Ericsson's portfolio?

14 A. Well, it can be, if you have alternatives that
15 are viable, that are acceptable, and that are
16 non-infringing.

17 From what I understand is that there is not
18 consensus or agreement on these non-infringing
19 alternatives. So while it can be, in this case, I don't
20 think it is appropriate.

21 Q. And would the actual real-world licenses have
22 taken that into account?

23 A. Absolutely.

24 MR. CAMPBELL: No further questions.

25 THE COURT: All right. Thank you.

1 Cross-examination.

2 MR. JONES: Thank you, Your Honor.

3 CROSS-EXAMINATION

4 BY MR. JONES:

5 Q. Three questions.

6 First, would a 50-cent royalty on all 802.11n
7 products for these five patents over the life of these
8 patents result in the payments of billions of dollars in
9 royalties?

10 A. I don't think I understand your question.

11 Q. I'll try again.

12 A. Okay.

13 Q. Would a 50-cent royalty payment --

14 A. Yep.

15 Q. -- on all 802.11n products for these five
16 patents, over the life of these patents, result in the
17 payment of billions of dollars in royalties?

18 A. I don't know. I haven't done that
19 calculation.

20 Q. Thank you, sir.

21 Number two, can you cite us to any documents
22 that show us that either RIM, HP, Option, Ascom, Sonim,
23 or Buffalo brought up Ericsson's LOAs and Ericsson's
24 RAND obligations in their negotiations of the licenses
25 you find instructive on your rate?

1 A. None that come to mind as I sit here, no.

2 Q. Thank you, sir.

3 And then finally, does the concept of smallest
4 saleable patent-practicing units have any implications
5 on RAND obligations on the part of Ericsson?

6 A. It -- it could. It may. I think more
7 instructive here is the market rates that people were
8 willing to pay which take into consideration the
9 smallest saleable unit.

10 Q. Okay. Did you -- do you believe that concept
11 has any application, as far as a downward trend or
12 impact, upon the RAND rates applicable to Ericsson's
13 five patents-in-suit?

14 A. Does what?

15 Q. Has a downward impact on the applicable RAND
16 rate?

17 A. Does the smallest saleable unit?

18 Q. That concept.

19 A. Not in this case; not given the facts.

20 Q. Thank you, sir.

21 MR. JONES: I pass the witness, Your
22 Honor.

23 THE COURT: Thank you, Mr. Jones.

24 Redirect?

25 REDIRECT EXAMINATION

1 BY MR. CAMPBELL:

2 Q. Mr. Bone, the letters of assurance to the IEEE
3 from Ericsson, those are public, correct, sir?

4 A. They are.

5 Q. Any reason you can think of that HP, RIM,
6 Buffalo would not have been aware of those?

7 A. Not that I can think of.

8 Q. Thank you, sir.

9 THE COURT: All right. Thank you. You
10 may step down.

11 Who will be your next witness?

12 MR. CAMPBELL: That's all our witnesses,
13 Your Honor.

14 We rest.

15 THE COURT: Plaintiffs finally close?

16 MR. CAMPBELL: Yes.

17 THE COURT: Defendants finally close?

18 MR. DAUCHOT: Yes, Your Honor.

19 THE COURT: All right.

20 MR. DAUCHOT: Do we have the exhibits in
21 evidence?

22 Your Honor, with your permission, I'd
23 just like to read into the record the slide numbers just
24 so that that's clear.

25 THE COURT: Well, let me do this before

1 you do that: Your final exhibit list and your
2 demonstrative list, I understand that you've handed
3 those to Ms. Ferguson; but if you would, let's offer
4 those on the record as we have previously, and then
5 we'll take up your matter if this doesn't solve it.
6 Okay.

7 MS. MOORE: Yes, Your Honor.

8 I have Plaintiff Ericsson's Final
9 Admitted Trial Exhibit List. And just one housekeeping
10 matter, this exhibit list includes Plaintiffs'
11 Exhibit 71, which, although it was discussed during
12 testimony, and I believe Defendants originally had
13 raised an objection that Your Honor overruled, I don't
14 know that we got confirmation it was admitted into the
15 record; and I would just like to clarify that.

16 THE COURT: All right. Any objection to
17 those exhibits?

18 MR. DE VRIES: No objection, Your Honor.

19 THE COURT: All right. That will be
20 marked as Plaintiffs' Exhibit List No. 8, and those
21 exhibits are admitted.

22 MS. MOORE: I also have Plaintiff
23 Ericsson's Demonstrative Evidence Trial Exhibit List.

24 THE COURT: All right. And have you
25 exchanged that with counsel?

1 MS. MOORE: Yes, Your Honor.

2 THE COURT: Any objections to those
3 demonstratives?

4 MR. DE VRIES: No, Your Honor.

5 THE COURT: All right. They will be
6 marked as demonstratives, as shown on the list, and that
7 will be Demonstrative Exhibit List No. --

8 COURTROOM DEPUTY: 9.

9 THE COURT: -- 9.

10 MS. MOORE: The last thing, Your Honor, I
11 have photographs of all the demonstrative boards that
12 were used during trial with Plaintiffs' demonstrative
13 exhibit numbers just for the ease of the Court.

14 THE COURT: All right. Are those
15 included on the list that you had?

16 MS. MOORE: Yes, Your Honor.

17 THE COURT: All right. Those will be
18 included with the demonstratives.

19 All right. Do Defendants have an exhibit
20 list they wish to offer?

21 MR. DAUCHOT: We do, Your Honor.

22 Defendants have Defendants' Admitted
23 Trial Exhibit List.

24 THE COURT: All right. It will be marked
25 as Defendants' Exhibit List No. 8.

1 Is there any objection to the exhibits
2 contained thereon? Is there any objection, Counsel?

3 MS. MOORE: No, Your Honor.

4 THE COURT: Be admitted.

5 All right. Anything further?

6 MR. DE VRIES: Yes, Your Honor. We have
7 two lists of admitted demonstrative exhibits. We have
8 Defendants' List of Admitted Demonstrative Exhibits.
9 That's the same list from earlier today.

10 We also have a supplemental list that
11 includes the demonstratives that were used during the
12 bench trial. That's Defendants' List of Admitted
13 Demonstrative Exhibits, June 12th, 2013, Bench Trial.

14 THE COURT: All right. Those will be
15 marked as Defendants' Exhibit Lists 9 and 10
16 respectively, and the demonstratives are so marked.

17 Okay. Anything further?

18 MR. DE VRIES: And I would just note for
19 the record, Your Honor, we handed up a pre-admit list at
20 the beginning of the bench trial. I believe that that
21 list is reflected on the admitted trial list that I'm
22 about to hand up.

23 With Your Honor's permission, I would
24 like the opportunity, if I'm incorrect about that, to
25 submit a supplemental that does include that.

1 THE COURT: All right. When would you
2 know that?

3 MR. DE VRIES: Probably in about five
4 minutes.

5 THE COURT: All right. As long as you
6 get it in by 7:00 o'clock, it will be received unless
7 there's some objection. If there is an objection, let
8 me know, and I'll come back in.

9 Anything further?

10 MR. DE VRIES: No, Your Honor.

11 THE COURT: Anything further from the
12 Plaintiff?

13 MR. CAMPBELL: Your Honor, there were
14 some exhibits that I rattled off too quickly today for
15 the bench trial that weren't on our bench trial
16 pre-admit list.

17 THE COURT: Uh-huh.

18 MR. CAMPBELL: Do we need to make a list
19 to get those in?

20 THE COURT: I admitted those, didn't I?

21 MR. CAMPBELL: You did.

22 THE COURT: Okay. Just give us an
23 updated list tomorrow of all of them, including those,
24 just so we'll have it for the record, if you would.

25 And Defendants can do likewise, if you

1 have any in that category.

2 All right. Anything else before we
3 adjourn for the evening?

4 MR. CAMPBELL: No, Your Honor.

5 THE COURT: All right. We are way past
6 the cocktail hour, and we will be adjourned until
7 tomorrow.

8 COURT SECURITY OFFICER: All rise.

9 THE COURT: Oh, let me give the parties
10 their final times. It's amazing how this comes out.

11 Plaintiffs have used 15 hours and 1
12 minute, and Defendants have used 15 hours and 2 minutes.

13 So congratulations.

14 (Court adjourned.)

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1 CERTIFICATION

2

3 I HEREBY CERTIFY that the foregoing is a
4 true and correct transcript from the stenographic notes
5 of the proceedings in the above-entitled matter to the
6 best of our abilities.

7

8

9 /s/ Shea Sloan
SHEA SLOAN, CSR
10 Official Court Reporter
State of Texas No.: 3081
11 Expiration Date: 12/31/14

12

13

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15

/s/ Judith Werlinger
16 JUDITH WERLINGER, CSR
Deputy Official Court Reporter
17 State of Texas No.: 731
Expiration Date 12/31/14

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